STIC-Biotech/ChemLib

From: Sent: To: Subject:	Ramirez, Delia Thursday, Decembe STIC-Biotech/Cheml 10/602219	r 22, 2005 4:38 PM Lib		
Hi,	eg e e e e			
I would like to request the fo	ollowing searches:			
1. SEQ ID NO: 11 and 12 in 2. SEQ ID NO:12 in the pro	n the nucleic acid data otein databases (comi	abases (commercial ar mercial and interferenc	nd interference) e)	
Thank you very much,				
Delia M. Ramirez, Ph.D. Patent Examiner Recombinant Enzymes-Art Unit 10 USPTO 400 Dulany Street, Remsen Bldg. Alexandria, VA 22314 (571) 272-0938 delia.ramirez@uspto.gov				·
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******** Searcher:		************* Type of Search NA# AA#: S/L: Oligomer: Encode/Transl:_ Structure #: Text:_ Inventor: Litigation:_	 	********** Vendors and cost where applicable STN: DIALOG: QUESTEL/ORBIT: LEXIS/NEXIS: SEQUENCE SYSTEM: WWW/Internet: Other (Specify):

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Patent No. 6887696;
GENERAL INFORMATION:
APPLICANT: GREER, Stephen A.;
APPLICANT: TUREBN, Thomas H.;
TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN;
TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN;
TITLE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION;
TITLE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION;
TITLE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION;
CURRENT APPLICATION NUMBER: US/09/993,059;
CURRENT PILING DATE: 2001-11-13;
NUMBER OF SEQ ID NOS: 37
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2: /cgn2_6/ptodata/1/ina/6A_COMB.seq:*

3: /cgn2_6/ptodata/1/ina/6B_COMB.seq:*

4: /cgn2_6/ptodata/1/ina/6B_COMB.seq:*

5: /cgn2_6/ptodata/1/ina/H_COMB.seq:*

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9: /cgn2_6/ptodata/1/ina/RB_COMB.seq:*
                 GenCore version 5.1.6
(c) 1993 - 2005 Compugen Ltd.
                                                                  nucleic search, using frame_plus_p2n model
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Patent No. 6890748

GENERAL INFORMATION:
APPLICANT: GARGER, Stephen A.
APPLICANT: TURPEN, Thomas H.
APPLICANT: KUMAGAI, Monto H.
TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN TITLE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION FILE REFERENCE: 008010087CPUS06
CURRENT APPLICATION NUMBER: US/10/103,327
CURRENT APPLICATION NUMBER: US/09/993,059
PRIOR FILING DATE: 2001-11-13
PRIOR FILING DATE: 2001-11-13
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 11
LENGTH: 1266
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US-09-993-059-7
; Sequence 7, Application US/09993059
; Patent No. 6887696
; GENERAL INFORMATION:
; APPLICANT: GARGER, Stephen A.
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APPLICANT: TURPEN, Thomas H.
APPLICANT: KUMAGAI, Monto H.
TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN
TITLE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION
FILE REFERENCE: 0080100870EUS06
CURRENT APPLICATION NUMBER: US/09/993,059
CURRENT FILING DATE: 2001-11-13
NUMBER OF SEQ ID NOS: 37
SOFTWARE: FASTESC for Windows Version 4.0
SEQ ID NO 7
LENGTH: 1278
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Matches:
Conservative:
Mismatches:
Indels:
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; ORGANISM: Homo sapiens
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (1)...(1275)
US-09-993-059-7
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Best Local Similarity:
Query Match:
DB:
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Best Local Similarity: 100.00\$ Mismatches: 0 Query Match: 100.00\$ Indels: 0 DB: 3 Gaps: 0 US-10-602-219-12 (1-421) x US-10-103-327-7 (1-1278)	Oy 1 MetGlnLeuArgAsnProGluLeuHisLeuGlycysAlaLeuAlaLeuArgPheLeuAla 20	Oy 21 LeuValSerTrpAspIleProGlyAlaArgAlaLeuAspAsnGlyLeuAlaArgThrPro 40	Qy 41 ThrMetGlyTrpLeuHisTrpGluArgPheMetCysAsnLeuAspCysGlnGluGluPro 60	Oy 61 AspSerCys1leSerGluLysLeuPheMetGluMetAlaGluLeuMetValSerGluGly 80	Oy 81 TrpLysAspalaGlyTyrGluTyrLeuCysIleAspaspCysTrpMetAlaProGlnArg 100	Oy 101 AspSerGluGlyArgLeuGlnAlaAspProGlnArgPheProHisGlyIleArgGlnLeu 120	Oy 121 AlaAsnTyrValHisSerLysGlyLeuLysLeuGlyIleTyrAlaAspValGlyAsnLys 140	Qy 141 ThrcysAlaGlyPheProGlySerPheGlyTyrTyrAspIleAspAlaGlnThrPheAla 160	Qy 161 AspTrpGlyValAspLeuLeuLysPheAspGlyCysTyrCysAspSerLeuGluAsnLeu 180	Qy 181 AlaAspGlyTyrLysHisMetSerLeuAlaLeuAsnargThrGlyArgSerIleValTyr 200	Qy 201 SerCysGluTrpProLeuTyrMetTrpProPheGlnLysProAsmTyrThrGluIleArg 220	Oy 221 GlnTyrCycAsnHisTrpArgAsnPheAlaAsplleAspAsrTrpLysSerIleLys 240	Qy 241 SerIleLeuAspTrpThrSerPheAsnGlnGluArglleValAspValAlaGlyProGly 260	Qy 261 GlyTrpAsnAspProAspMetLeuVallleGlyAsnPheGlyLeuSerTrpAsnGlnGln 280	Oy 281 ValThrGlnMetAlaLeuTrpAlaIIeMetAlaAlaProLeuPheWetSerAsnAspLeu 300	Qy 301 ArgHisileSerProGlnAlaLysAlaLeuLeuGlnAspLysAspValileAlaileAsn 320	Qy 321 GlnAspProLeuGlyLysGlnGlyTyrGlnLeuArgGlnGlyAspAsnPheGluValTrp 340
Db 661 CAGTACTGCAATCACTGGCGAAATTTTGCTGACATTGATGATTCCTGGAAAAGTATAAAG 720 Qy 241 SerileLeuAspTrpThrSerPheAsnGlnGluArg1leValAspValAlaGlyProGly 260 Oh 721 ACHAGTACTACAACTATTATATATATATATATATATATATATA	261 GlyTrpAsnAspProAspMetLeuValileGlyAsnPheGlyLeuSerTrpAsnGlnGln	GGIIGGMAIGRACCCAGGATAIGITAGIGAIIGGCATACTIIGGCCIICAGCIGGAAICAGCAA ValThrGlnMetAlaLeuTrpAlaIleMetAlaAlaProLeuPheMetSerAsnAspLeu 	301 ArgHisTleSerProGlnAlaLysAlaLeuLeuGlnAspLysAspVallleAlalleAsn	321 GlnAspProLeuGlyLysGlnGlyTyrGlnLeuArgGlnGlyAspAsnPheGluValTrp	341 GluArgProLeuSerGlyLeuAlaTrpAlaValAlaMetileAsnArgGlnGluIleGly 11 [361 GlyProArgSerTyrThrIleAlaValAlaSerLeuGlyLySGlyValAlaCysAsnPro [381 AlaCysPheileThrGlnLeuLeuProValLysArgLysLeuGlyPheTyrGluTrpThr 	401 SerArgLeuArgSerHis1leAsnProThrGlyThrValLeuLeuGlnLeuGluAsnThr 	1201 TCANGGITAAGAAGICACATAAAICCCACAGGCACIGITTIGCITCAGGIAGAAA 421 Met 421	DD 1261 AIG 1263 RESULT 4 US-10-103-327-7	; Sequence 7, Application US/10103327 ; Patent No. 6890748 ; GENERAL INPORMATION: ; APPLICANT: GARGER, Stephen A.	; APPLICANT: TURREN, Thomas H. ; APPLICANT: KUMAGAI, Monto H. ; TITLE OF INVENTION: PRODUCTION OF LYSOSOWAL ENZYMES IN ; TITLE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION	; FILE REFERENCE: 008010087CPUS06; CURRENT APPLICATION NUMBER: US/10/103,327; CURRENT FILING DATE: 2002-03-20; PRIOR APPLICATION NUMBER: US/09/993,059	; PRIOR FILING DATE: 2001-11-13; NUMBER OF SEQ ID NOS: 37; SOFTWARE: FastSEQ for Windows Version 4.0; SEQ ID NO 7	; LENGTH: 1278 ; TYPE: DN: ; ORGANISM: Homo sapiens ; FEATURE:		Alignment Scores: Pred. No.: Score: 2314.00 Matches: 421 Percent Similarity: 100.00% Conservative: 0

3 0 1 1 3 0 6 4 8 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	161 AspTrpGlyValAspLeuLeuLysPheAspGlyCysTyrCysAspSerLeuGluAsnLeu 180	201 SerCysGluTrpProLeuTyrMetTrpProPheGlnLysProAsnTyrThrGluIleArg 220	241 SerIleLeuAspTrpThrSerPheAsnGlnGluArgIleValAspValAlaGlyProGly 260	281 ValThrGlnMetAlaLeuTrpAlaileMetAlaAlaProLeuPheMetSerAsnAspLeu 300	CalcasperoleuglyLysGlnGlyTyrGlnLeuArgGlnGlyAspAsnPheGluValTrp 34	361 GlyProArgSerTyrThrIleAlaValAlaSerLeuGlyLysGlyValAlaCysAsnPro 380	SerArgLeuArgSerHislleAsnProThrGlyThrValLeuLeuGlnLeuGluAsnThr 4	1261 [6 -103-327, sence 13
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Qy 341 GluArgProLeuSerGlyLeuAlaTrpAlaValAlaMetIleAsnArgGlnGluIleGly 360 Db 1021 GAACGACCTCTCTCAGGCTTAGCCTAGGCTATGATAACCGGCAGGAGATTGGT 1080 Qy 361 GlyProArgSerTyTThrIleAlaValAlaSerLeuGlyLyGGlyValAlaCygAsnPro 380 Db 1081 GGACCTCGCTCTTATACCATCGCAGTTGCTTCCCTGGGTAAGGAGTGGCTGTAATCCT 1140 Qy 381 AlaCygPheIleThrGlnLeuLeuProValLygArgLygLeuGlyPheGluTrpThr 400 Db 1141 GCCTGCTTCATACACAGGCTCCTGTGAAAGGAGTAGGGTTCTATGAATGGACT 1200 Ov 401 SerArgLeuArgSerHisIleAsnProThrGlyThrValLeuLeuGluAsnThr 420		ESULT 5 S-09-993-059-13 S-09-903-059-13, Application US/09993059 Patent No. 6887696 GENERAL INFORMATION: APPLICANT: GARGER, Stephen A. APPLICANT: TURPEN, Thomas H. APPLICANT: KUMAGAI, Monto H.	; TITLE OF INVENTION: PRODUCTION OF LYSOSOWAL ENZYMES IN ; TITLE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION ; FILE REPERENCE: 008010087CPUS06 ; CURRENT APPLICATION NUMBER: US/09/993,059 ; CURRENT FILING DATE: 2001-11-13 ; NUMBER OF SEQ ID NOS: 37 ; SOFTWARE: PastSEQ for Windows Version 4.0 ; SRO ID NO 13	co.	: 8.25e-252 Lengt 2314.00 March LY: 100.00\$ Conse arity: 100.00\$ Misma 3 Gaps:	US-10-602-219-12 (1-421) x US-09-993-059-13 (1-1284) QY	Db 61 CTCGTTTCCTGGGACATCCCTGGGGCACTGGACAATGGATTGGCAAGGACCTT 120 Qy 41 ThrMetGlyTrpLeuHisTrpGluArgPheMetCygAsnLeuAspCysGlnGluGluPro 60 121 ACCATGGGCTGGCTGGCAGCTTCATGTGCAACTTGACTGCCAGGAAGAGCCA 180 Qy 61 AspSerCygIleSerGluLysLeuPheMetGluMetAlaGluLeuMetValSerGluGly 80	Db 181 GATTCTGCATCAGAGAGACTCTTCATGGAGATGGCAGAGCTCTGGAAGGC 240 Qy 81 TrpLy8aspalaGlyTyrGluTyrLeuCys1leAspAspCysTrpWetAlaProGlnarg 100

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1081 GGACCTCGCTCTTATACCATCGCAGTTGCCTTCCCTGGGTAAAGGAGTGGCCTGTAATCCT 1140
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US-09-993-059-3
; Sequence 3, Application US/09993059
; Betent No. 6887696
; GENERAL INFORMATION:
APPLICANT: TUREN, Stephen A.
TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENPRESSION
TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENPRESSION
FILE REFERENCE: 008010087CPUS06
; CURRENT APPLICATION NUMBER: US/09/993,059
; CURRENT APPLICATION NUMBER: 2001-11-13
NUMBER OF SEQ ID NOS: 37
; SOFTWARE: FABELSEQ for Windows Version 4.0
; SEQ ID NO 3
; LENGTH: 1290
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ORGANISM: Homo sapiens
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           GENERAL INFORMATION:
APPLICANT: GARGER, Stephen A.
APPLICANT: TURPEN, Thomas H.
APPLICANT: TURPEN, Thomas H.
TITLE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION
TITLE OF INVENTION: PLANTS BY 102/103,327
CURRENT APPLICATION NUMBER: US/10/103,327
CURRENT FILING DATE: 2002-03-20
PRIOR APPLICATION NUMBER: US/09/993,059
PRIOR FILING DATE: 2001-11-13
NUMBER OF SEQ ID NOS: 37
SOFTWARE: PSELSEQ for Windows Version 4.0
SEQ ID NO 13
LENGTH: 1284
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Matches:
Conservative:
Mismatches:
Indels:
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2314.00
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                                                                                                                                                                                                                                                           ; TYPE: DNA
; ORGANISM: Homo sapiens
; FRATURE:
; NAME/KEY: CDS
; LOCATION: (1)...(1284)
US-10-103-327-13
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Best Local Similarity:
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q	1021 GAACGACCTCTCTCAGGCTTAGCCTGGGCTGTAGCTATGATAAACCGGCAGGAGATTGGT 1080
ò	361 GlyproArgSerTyrThrIleAlaValAlaSerLeuGlyLygGlyValAlaCygAgnPro 380
a	-
ò	381 AlaCysPheIleThrGlnLeuLeuProValLysArgLysLeuGlyPheTyrGluTrpThr 400
qq	1141 Geergerreacacacacacacacacacacacaaaaaaaaaa
ò	401 SerArgLeuArgSerHisIleAsnProThrG]yThrValLeuLeuGluAsnThr 420
qq	1201 TCAAGGTTAAGAAGTCACATAAATCCCACAGGCACTGTTTTGCTTCAGCTAGAAAACACA 1260
à	421 Met 421
QQ	1261 ATG 1263
RESULT US-10- ; Sequ ; Pate ; GENE	RESULT 8 US-10-103-327-3 ; Sequence 3, Application US/10103327 ; Patent No. 6890748 ; GENERAL INFORMATION:
, APP	PLICANT: GARGER, Stephen A. TURPEN, Thomas H. STICANT: ATMAGAT MONTO U
; TIT	TIE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN
 Ger	LE REFERENCE: 008010081709506 RRENT APPLICATION NUMBER: US/10/103,327 RRENT FILING DATE: 2002-03-20
, PRI , PRI	OR APPLICATION NUMBER: US/09/993,059 OR FILING DATE: 2001-11-13 MBER OF SEQ ID NOS: 37
SEQ	OFTWARE: FastSEQ for Windows Version 4.0 Q ID NO 3 I.ENGTH: 1290
	TYPE: DNA ORGANISM: Homo sapiens
; NA ; NA ; LO US-10-	F-GATIONS: LOCATION: (1)(1290) L0-103-327-3
Alignm Pred.	8.31e-252 Length:
Score: Percen Best L Query	2314.00 rity: 100.00\$ ilarity: 100.00\$
us-10-	(1-421) x US-10-103-327-3 (1-1290)
ò	1 MetGlnLeuArgAsnProGluLeuHisLeuGlyCysAlaLeuAlaLeuArgPheLeuAla 20
ą d	1 ATGCAGCTGAGGAACCCAGAACTACATCTGGGCTGCGCGCTTGCGCTTGCGCTTCGCTGCC
ð.	21 LeuValSerTrpAspIleProGlyAlaArgAlaLeuAspAsnGlyLeuAlaArgThrPro 40
QQ	61 CTCGTTTCCTGGGACATCCCTGGGGCTAGAGCACTGGACAATGGATTGGCAAGGACGCCT 120
ò	1 ThrMetGlyTrpLeuHisTrpGluArgPheMetCysAsnLeuAspCysGlnGluGluPro
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Patent No. 6887696
GENERAL INFORMATION:
APPLICANT: GARGER, Stephen A.
APPLICANT: TURPEN, Thomas H.
TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN TITLE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION: TITLE REFERENCE: 008010087CPUS06
CURRENT APPLICATION NUMBER: US/09/993,059
CURRENT FILING DATE: 2001-11-13
NUMBER OF SEQ ID NOS: 37
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 9
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ORGANISM: Homo sapiens
FEATURE:
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US-09-993-059-9
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Query Match:
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   ATG 1263
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GATTCCTGCATCAGTGAGAAGCTCTTCATGGAGATGGCAGAGATCATGGTCTCAGAAGGC
                                                            241 TGGAAGGATGCAGGTTATGAGTACCTCTGCATTGATGACTGTTGGATGGCTCCCCCAAAGA
                                                                                                                         GATTCAGAAGGCAGACTTCAGGCAGACCCTCAGCGCTTTCCTCATGGGATTCGCCAGCTA
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                                              TrpLysAspAlaGlyTyrGluTyrLeuCysIleAspAspCysTrpMetAlaProGlnArg
                                                                                                       AspSerGluGlyArgLeuGlnAlaAspProGlnArgPheProHisGlyIleArgGlnLeu
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Conservative:
Mismatches:
Indels:
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                                                 8.37e-252
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                                                                    Percent Similarity:
Best Local Similarity:
Query Match:
DB:
  ; NAME/KEY: CDS
; LOCATION: (1).
US-10-103-327-9
                                         Alignment Scores:
Pred. No.:
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                                                                                661 CAGTACTGCAATCACTGGCGAAATTTTGCTGACATTGATGATTCCTGGAAAAGTATAAAG
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SerCysGluTxpProLeuTyrMetTrpProPheGlnLysProAsnTyrThrGluIleArg
                                           TCCTGTGAGTGGCCTCTTTATATGTGGCCCTTTCAAAAGCCCAATTATACAGAAATCCGA
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US-10-103-327-9

i Sequence 9, Application US/10103327

j Patent No. 6890748

j GENERAL INFORMATION:
    APPLICANT: GARGER, Stephen A.
    APPLICANT: TURPEN, Thomas H.
    APPLICANT: TURPEN, Thomas H.
    APPLICANT: TURPEN, Thomas H.
    APPLICANT: TURPEN, Thomas H.
    APPLICANT: TURPEN, TOWAGAI, MONTO.
    TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN
    TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN
    TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN
    TITLE OF APPLICATION NUMBER: US/10/103,327
    CURRENT APPLICATION NUMBER: US/10/9993,059
    PRIOR FILING DATE: 2001-11-13
    NUMBER OF SEQ ID NOS: 37
    SOFTWARE: FastSEQ for Windows Version 4.0
    SEQ ID NO 9
    LENGTH: 1296
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ORGANISM: Homo sapiens
PEATURE:
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                                                                         221 GlnTyrCysAsnHisTrpArgAsnPheAlaAspIleAspAspSerTrpLysSerIleLys
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AspTrpGlyValAspLeuLeuLysPheAspGlyCysTyrCysAspSerLeuGluAsnLeu
                         481 GACTGGGGAGTAGATCTGCTAAAATTTTGATGGTTGTTACTGTGACAGTTTTGGAAAATTTG
                                                         AlaAspGlyTyrLysHisMetSerLeuAlaLeuAsnArgThrGlyArgSerIleValTyr
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| Sequence 18, Application US/08928881
| Patent No. 6083725
| GENERAL INFORMATION: THERAPY FOR ALPHA-GALACTOSIDASE A
| TITLE OF INVENTION: THERAPY FOR ALPHA-GALACTOSIDASE A
| TITLE OF INVENTION: DEFICIENCY
| STREET: 225 Franklin Street
| CITY: BOSION |
| STATE: MA
| COUNTRY: USA
| COUNTRY: USA
| ZIP: 0210-2204
| ZIP: 0210-2204
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                                                                                       US-10-103-327-5

US-10-103-327-5

US-10-103-327-5

Patent No. 6890148

GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: TUREN, Thomas H.
APPLICANT: TUREN, MONICO H.
TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN TITLE OF INVENTION: PRODUCTION NUMBER: US/09/993,059

CURRENT FILING DATE: 2002-03-20

PRIOR APPLICATION NUMBER: US/09/993,059

PRIOR PELING DATE: 2001-11-13

NUMBER OF SEQ 1D NOS: 37

SOFTWARE: PASTSEQ for Windows Version 4.0

SEQ 1D NO 5

LENGTH: 1308

TYPE: DNA

ORGANISM: Homo sapiens

PEATURE:
HAME/KEY: CDS

1. LOCATION: (1) ... (1308)
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Pred. No.:
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Percent Similarity:
Best Local Similarity:
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                                                                   GlnTyrCysAsnHisTrpArgAsnPheAlaAspIleAspAspSerTrpLysSerIleLys
                                                                                                                      GTAACTCAGATGGCCCTCTGGGCTATCATGGCTGCTCCTTATTCATGTCTAATGACCTC
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                                                                                                         SerileLeuAspTrpThrSerPheAsnGlnGluArgIleValAspValAlaGlyProGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COUNTRY: USA
ZIP: 02110-2804
COMPUTER READABLE FORM:
MEDIUW TYPE: Floppy disk
COMPUTER: IBW PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/543,921
FILING DATE: 06-Apr-2000
CLASSIFICATION: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 14
US-09-543-921-18
is Sequence 18, Application US/09543921
j Patent No. 6395884
is GENERAL INFORMATION:
j TITLE OF INVENTION: THERAPY FOR ALPHA-GALACTOSIDASE is TITLE OF INVENTION:
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CORRESPONDENCE ADDRESS:
ADDRESSEE: Fish & Richardson STREET: 225 Franklin Street CITY: Boston STATE: MA
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APPLICANT: Selden, Marianne
APPLICANT: Selden, Carol M
APPLICANT: Treco, Douglas A
APPLICANT: Treco, Douglas A
APPLICANT: Williams, Melanie D
APPLICANT: Schuetz, Thomas J
APPLICANT: 1991-001)
CURRENT FILING DATE: 1996-09-13
FRIOR APPLICATION NUMBER: 60/026,014
FRIOR APPLICATION NUMBER: 06/28,881
FRIOR FILING DATE: 1997-09-12
FRIOR FILING DATE: 1997-09-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; Sequence 3, Application US/09266014; Patent No. 6458574; GENERAL INFORMATION:
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; TYPE: DNA
; ORGANISM: Homo sapiens
US-09-266-014-3
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                                                                             NAME: Fraser, Janis K.
REGISTRATION NUMBER: 34,819
REFERENCE/DOCKET NUMBER: 07236/003001
TELECOMMUNICATION INFORMATION:
TELEPHONE: 617/542-8906
INFORMATION FOR SEQ ID NO: 18:
SEQUENCE CHARACTERISTICS:
LENGTH: 1343 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
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Matches:
Conservative:
Mismatches:
Indels:
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                    APPLICATION NUMBER: 08/928,881
FILING DATE: <UNKNOWN>
ATTORNEY/AGENT INFORMATION:
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  PRIOR APPLICATION DATA:
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Db 936 CGACACATC Qy 321 GlnAspPro Db 996 CAGGACCCC Qy 341 GluArgPro Db 1056 GAACACCC	361	381	401 Ser 1236 TCA	Oy 421 Met 421 Db 1296 ATG 1298	Search completed: Decemi Job time : 250 secs											
Alignment Scores: 8.84e-252 Length: 1343 Pred. No.: 2314.00 Matches: 421 Score: 100.00\$ Conservative: 0 Best Local Similarity: 100.00\$ Mismatches: 0 Query Match: 3 Gaps: 0	US-10-602-219-12 (1-421) x US-09-266-014-3 (1-1343) Qy		41 ThrMetGlyTrpLeuHisTrpGluArgPheMetCysAsnLeuAspCysGlnGluGluPro 60	61 AspSerCysIleSerGluLysLeuPheMetGluMetAlaGluLeuMetValSerGluGly 80 	81 TrpLysAspalaGlyTyrGluTyrLeuCysIleAspaspCysTrpWetAlaBroGlnarg 100 	101 AspSerGluGlyArgLeuGlnAlaAspProGlnArgPheProHisGly1leArgGlnLeu 120 	121 AlaasntyrvalHisSeriysGlyLeuLysLeuGlyllefyralaaspvalGlyAsnLys 140 	141 ThrcysaladlyPheProdlySerPheGlyTyrTyraspIleAspaladlnThrPheAla 160	161 ASPIRDGIYVAlASPLeuLeuLysPheAspGlyCysTyrCysAspSerLeuGluAsnLeu 180 	181 AlaAspGlyTyrLysHisMetSerLeuAlaLeuAsnArgThrGlyArgSerIleValTyr 200 	201 SercysGluTrpProLeuTyrMetTrpProPheGlnLysProAsnTyrThrGluIlearg 220	221 GINTYrCysasnHisTrpArgasnPhealaaspileaspaspSerTrpLysSerIleLys 240 	241 SerIleLeuaspTrpThrSerPheasnGlnGluarglleValaspValalaGlyProGly 260 	261 GlyTrpAsnAspProAspMetLeuVallleGlyAsnPheGlyLeuSerTrpAsnGlnGln 280 	281 ValThrGlnWetAlaLeuTrpAlaIleMetAlaAlaProLeuPheWetSerAsnAspLeu 300 	301 ArgHislleSerProGlnAlaLysAlaLeuLeuGlnAspLysAspVallleAlalleAsn 320
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ò	341 G	GluhrgProLeuSerGlyLeuAlaTrpAlaValAlaMetIleAsnArgGlnGluIleGly	360
qq	1056 G	GAACGACCTCTCTCAGGCTTAGCCTGGGCTGTAGCTATGATAAACCGGGAGGAGATTGGT	1115
ò	361 G	361 GlyProArgSerTyrThrlleAlaValAlaSerLeuGlyLysGlyValAlaCysAsnPro	380
qq	1116 60	GGACCTCGCTCTTATACCATCGCAGTTGCTTCCCTGGGTAAAGGAGTGGCCTGTAATCCT	1175
ઠે	381 A	AlaCysPheIleThrGlnLeuLeuProValLysArgLysLeuGlyPheTyrGluTrpThr	400
qq	1176 GC		1235
ò	401 Se	SerargLeuArgSerHislleAsnProThrGlyThrValLeuLeuGlnLeuGluAsnThr	420
q	1236 TC		1295
ò	421 Me	Met 421	
q	1296 AT	 ATG 1298	
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TISSUE=Fibroblast;
MEDLINE=872466919 bubMed=1036505;
MEDLINE=87246691 bubMed=1036505;
MEDLINE=87246 bubMed=1036505;
Martin B.M., Kaslow D.C., Migeon B.R., Choudary P.V.,
Stubblefield B.K., Mayor J.A., Murray G.J., Barranger J.A.,
Ginns B.I.;
"Signal sequence and DNA-mediated expression of human lysosomal alpha-galactosidase A.";
Eur. J. Blochem. 165:275-280(1987).
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Ross M.T., Graffham D.V., Coffey A.J., Scherer S., McLay K., Muzny D., Platzer M., Howell G.R., Burrows C., Bird C.P., Frankish A., Lovell F.L., Howe K.L., Ashurst J.L., Fulton R.S., Sudbrak R., Wen G., Jones M.C., Hurles M.E., Andrews T.D., Scott C.E., Searle S., Ramser J., Whittaker A. Deadman R., Carter N.P., Hunt S.E., Chen R., Cree A., Gunaratne P., Havlak P., Hodgson A., Metzker M.L., Richards S., Scott G., Steffen D., Sodergren E., Wheeler D.A., Wallsough R., Ambrose K.D., Ansari-Lari M.A., Aradhya S., Ashwell R.I., Babage A.K., Bagguley C.L., Ballabio A., Banerjee R., Barker G.E., Barlow K.F., Barrett I.P., Bates K.N., Beare D.M.
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Mammalia, Eutheria, Euarchontoglires, Primates, Catarrhini, Hominidae,
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                                                                                                                                                                                                                                                                                                                          01-JAN-1988 (Rel. 06, Created)
01-AUG-1988 (Rel. 08, Last sequence update)
10-MAY-2005 (Rel. 47, Last annotation update)
Alpha-galactosidase A precursor (EC 3.2.1.22) (Melibiase) (Alpha-D-galactosidase A) (Agalsidase
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MEDLINE=59352559; PubMed=7626884;
Oeltjen J.C., Liu X., Lu J., Allen R.C., Muzny D.M., Belmont J.W., Gibbs R.A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDIINE-89263745; PubMed-2542896;
Kornreich R., Desnick R.J., Bishop D.F.;
"Nucleotide sequence of the human alpha-galactosidase A gene.";
Nucleic Acids Res. 17:3301-3302(1989).
 05duh8
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TISSUE=Lymphoblast;
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Brackley H., Sealely O., Berk A., Serkled G., Bictochmidt K., Brady N., Bray-N., Bray-Linds. S., Briddeman A.M., Broom A.J., Proom N.J., Bonnin D., Sh Bruticad E.A., Banido C., Bray C., Char Y., Chako J., Chabon J., Chabon J., Chabon J., Chabon J., Chapon J., Chap

MEDLINE=95380278; PubMed=7503918;
Novo F.J., Kruszewski A., McDermot K.D., Goldspink G., Gorecki D.C.;
"Editing of human alpha-galactosidase RNA resulting in a pyrimidine to purine conversion."; REVIEW ON FD VARIANTS.
MEDIINE=94258158; PubMed=7911050;
BENG C.M., Desnick R.J.;
"Molecular basis of Fabry disease: mutations and polymorphisms in the human alpha-galactosidase A gene."; "A case of Fabry's disease in a patient with no alpha-galactosidase A activity caused by a single amino acid substitution of Pro-40 by MEDLINE-91101674; PubMed-1846223; von Scheidt W., Eng C.M., Fitzmaurice T.F., Erdmann E., Hubner G., Olsen E.G.J., Christomanou H., Kandolf R., Bishop D.F., Desnick R.J.; "An atypical variant of Fabry's disease with manifestations confined VARIANT FD GLN-301.
MEDIADE-910-22721; PubMed-2171331;
MEDIADE-910-27721; PubMed-2171331;
Sakuraba H., Oshima A., Fukuhara Y., Shimmoto M., Nagao Y.,
Bishop D.F., Desnick R.J., Suzuki Y.;
Bishop D.F., Desnick R.J., Suzuki Y.;
"Identification of point mutarions in the alpha-galactosidase A gene
in classical and arypical hemizygotes with Fabry disease.";
Am. J. Hum. Genet. 47:784-789(1990). MEDIJINE-89198098; PubMed-2539398; Bernstein H.S., Bishop D.F., Astrin K.H., Kornreich R., Eng C.M., Sakuraba H., Desnick R.J.; Party disease: six gene rearrangements and an exonic point mutation in the alpha-galactosidase gene."; D.F., Calhoun D.H., Bernstein H.S., Hantzopoulos P., Quinn M., MEDILINE=88112869; PubMed=2892762; DOI=10.1016/0378-1119(87)90374-X; Quinn M., Hantzopoulos P., Fidanza V., Calhoun D.H.; Agonomic clone containing the promoter for the gene encoding the human lysosomal enzyme, alpha-galactosidase A."; Gene E8:177-188(1987). MEDLINE=90092580; PubMed=2152885; DOI=10.1016/0014-5793(90)80046-L; Koide T., Ishiura M., Iwai K., Inoue M., Kaneda Y., Okada Y., Uchida T.; X-RAY CRYSTALLOGRAPHY (3.45 ANGSTROMS) OF 32-422 IN COMPLEX WITH PRODUCT, HOMODIMERIZATION, AND N-GLYCOSYLATION. Pubmed=15003450; DOI=10.1016/j.jmb.2004.01.035; Garman S.C., Garboczi D.N.; "The molecular defect leading to Fabry disease: structure of human "Human alpha-galactosidase A: nucleotide sequence of a cDNA clone encoding the mature enzyme."; Proc. Natl. Acad. Sci. U.S.A. 83:4859-4863(1986). MEDLINE=88234528; PubMed=2836863; Bishop D.F., Kornreich R., Desnick R.J.; "Structural organization of the human alpha-galactosidase A gene: further evidence for the absence of a 3' untranslated region."; Proc. Natl. Acad. Sci. U.S.A. 85:3903-3907(1988). Nucleic Acids Res. 23:2636-2640(1995). Engl. J. Med. 324:395-399(1991) J. Mol. Biol. 337:319-335(2004). FEBS Lett. 259:353-356(1990). Hum. Mutat. 3:103-111(1994). NUCLEOTIDE SEQUENCE OF 1-64. RNA EDITING OF POSITION 396 NUCLEOTIDE SEQUENCE OF 1-64 to the myocardium."; alpha-galactosidase. VARIANT FD TRP-356. VARIANT FD VAL-296. VARIANT FD SER-40. Desnick R.J.;

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Suzuki Y., Sugano S., Totoki Y., Toyoda A., Takeda T., Sakaki
Tanaka A., Yokoyama S.;
Submitted (APR-2005) to the EMBL/GenBank/DDBJ databases.
EMBL; AK222627; BAD96347.1; -; mRNA.
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Suzuki Y., Yoshitomo K., Maruyama K., Suyama A., Sugano S.;
Suzuki Y., Yoshitomo K., Maruyama K., Suyama A., Sugano S.;
"Construction and Characterization of a full length-enriched end-enriched cDNA library.";
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13-SEP-2005 (TrEMBLrel. 31, Last sequence update)
13-SEP-2005 (TrEMBLrel. 31, Last annotation update)
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Maruyama K., Sugano S.;
"Oligo-capping: a simple method to replace the eucaryotic mRNAs with oligoribonucleotides.";
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Homo sapiens (Human).
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NUCLEOTIDE SEQUENCE.
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NUCLEOTIDE SEQUENCE.
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Mammalia, Eutheria, Euarchontoglires, Primates, Catarrhini, Hominidae,
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Kalnine N., Chen X., Rolfs A., Halleck A., Hines L., Bisenstein S., Koundinya M., Raphael J., Moreira D., Kelley T., LaBaer J., Lin Y., Phelan M., Farmer A., "Cloning of human full-length CDSs in BD Creator (TM) System Donor
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EMBL; BT006864; AAP35510.1; -; mRNA.
SEQUENCE 429 AA; 48766 MW; 613F8BF21B107D7B CRC64;
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100.0%; Pred. No. 2.8e-187;
tive 0; Mismatches 0;
                                                              Query Match 100.0%; Score 2314; DB 1;
Best Local Similarity 100.0%; Pred. No. 2.8e-187;
Matches 421; Conservative 0; Mismatches 0;
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J. Clin. Invest. 83:1390-1399(1989).
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini; Hominidae;
                                                                                                                            ADGYKHMSLALNRTGRSIVYSCEWPLYMWPPQKPNYTEIRQYCNHWRNFADIDDSWKSIK
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Bishop D.F., Calhoun D.H., Bernstein H.S., Hantzopoulos P., Quinn M.,
Desnick R.J.;
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DSCISEKLFMENAELMVSEGWKDAGYEYLCIDDCWMAPQRDSEGRLQADPQRFPHGIRQL
                                                                                               ANYVHSKGLKLGIYADVGNKTCAGFPGSFGYYDIDAQTFADWGVDLLKFDGCYCDSLENL
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GO; GO:0004557; F:alpha-galactosidase activity; IEA.

GO; GO:0004557; F:alpha-galactosidase activity; IEA.

GO; GO:0004553; P:hydrolase activity, hydrolyzing O-glycosyl ...

GO; GO:0005957; P:carbohydrate metabolism; IEA.

InterPro; IPR002241; Glyco_hydro_G7.

InterPro; IPR00111; Glyco_hydro_GHD.

PRODOM; PR00245; Malbiase; 1.

PRINTS; PR00740; GLHYDRLASE27.

PRODOM; PR002512; ALPHA_GALACTOSIDASE; 1.

Glycosidase; Hydrolase.
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05-JUL-2004 (TrEMBLrel. 27, Last sequence update)
05-JUL-2004 (TrEMBLrel. 27, Last annotation update)
Alpha-galactosidase A (EC 3.2.1.22) (Fragment).
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                                                                      01-0CT-1996 (Rel. 34, Created)
01-0CT-1996 (Rel. 34, Last sequence update)
10-MAY-2005 (Rel. 47, Last annotation update)
10-MAY-2005 (Rel. 47, Last annotation update)
10-MAY-2005 (Rel. 47, Last annotation update)
galactosidase A precursor (BC 3.2.1.22) (Melibiase) (Alpha-D-galactosidase A).
Name=Gla; Synonyms=Ags;
Num musculus (Mouse).
Bukaryota; Metazoa (Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Buarchontoglires; Glires; Rodentia; Sciurognathi;
Marroidae; Murinae; Mus.
                                                   EYLCIDDCWMAPQRDSEGRLQADPQRPPHGIRQLANYVHSKGLKLGIYADVGNKTCAGPP
                                                                                                                                                                                    YMWPFQKPNYTEIRQYCNHWRNFADIDDSWKSIKSILDWTSFNQERIVDVAGPGGWNDPD
                                                                                                                                                                                                                                                    MLVIGNFGLSWNQQVTQMALWAIMAAPLFMSNDLRHISPQAKALLQDKDVIAINQDPLGK
GSFGYYDIDAQTFADWGVDLLKFDGCYCDSLENLADGYKHMSLALNRTGRSIVYSCEWPL
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STRAIN=C57BL/6; TISSUB=Kidney;
MEDLINE=96125203; PubMed=8543175; DOI=10.1016/0378-1119(95)00592-7;
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Oeltjen J.C., Liu X., Lu J., Allen R.C., Muzny D.M., Belmont J.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE-96316016; PubMed-8733892; DOI=10.1006/bmme.1996.0020; MEDLINE-96316016; PubMed-8733892; DOI=10.1006/bmme.1996.0020; GOLLID R.W., Bishop D.F., Wang A.M., Zeidner K.M., Ioannou Y.I., Adler D.A., Disteche C.M., Desnick R.J.; "The entire genomic sequence and cDNA expression of mouse alpha-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "Sixty-nine kilobases of contiguous human genomic sequence con
the alpha-galactosidase A and Bruton's tyrosine kinase loci.";
Mamm. Genome 6:334-338(1995).
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MEDLINE=22388257; PubMed=12477932; DOI=10.1073/pnas.242603899;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Obshima T., Murray G.J., Nagle J.W., Quirk J.M., Kraus M.H. Barton N.W., Brady R.O., Kulkarni A.B.; "Structural organization and expression of the mouse gene
                                                                                                                                                                                                                                                                                                                                                                                                        361 LLPVKRKLGFYEWTSRLRSHINPTGTVLLQLENTM 395
                                                                                                                                                                                                                                                                                                                                                                                       LLPVKRKLGFYEWTSRLRSHINPTGTVLLQLENTM 421
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NUCLEOTIDE SEQUENCE [LARGE SCALE MRNA].
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Biochem. Mol. Med. 57:139-148(1996).
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Gene 166:277-280(1995).
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NUCLEOTIDE SEQUENCE.
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Matches 395; Conservative

Local Similarity

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ANYVHSKGLKLGIYADVGNKTCAGFPGSFGYYDIDAQTFADWGVDLLKFDGCYCDSLENL 180

181 ADGYKHMSLALNRTGRSIVYSCEWPLYMWPFQKPNYTEIRQYCNHWRNFADIDDSWKSIK 240

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GPRSYTIAVASLGKGVACNPACFITQLLPVKRKLGFYEWTSRLRSHINPTGTVLLQLE 418

SILDWTSFNOERIVDVAGPGGWNDPDMLVIGNFGLSWNOOVTOMALWAIMAAPLFMSNDL 300

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A Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
Altachul S.P., Zeeberg B. Buetow K.H., Schaefer C.F., Bhat N.K.,
Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
A plopking R.F., Jordan H., Moore T. Max S.I., Mang J., Haidh F.,
Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
A platchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,
A Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
A Richards S.W. Worley Y.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
A Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
A Wilting M.M., Madan A., Young A.C., Shevchenko Y., Boutfard G.G.,
A Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,
Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,
A Butterfield Y.S.N. Krzywinski M.I., Skalska U., Smailus D.E.,
Cheneration and initial analysis of more than 15,000 full-length human
and mouse cDNA sequences.";
Proc. Natl. Acad. Sci. U.S. A., 99:16899-16903(2002).
Proc. Natl. Acad. Sci. U.S. A., 99:16899-16903(2002).
C -1 CATALYTIC ACTIVITY: Hydrolysis of terminal, non-reducing alpha-D-
Gligosaccharides, galactcomannans and galactosles.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This Swiss-Prot entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the Buropean Bioinformatics Institute. There are no restrictions on its use as long as its content is in no way modified and this statement is not
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N-linked (GlCNAc. .) (By similarity).
N-linked (GlCNAc. .) (By similarity).
N-linked (GlCNAc. .) (By similarity).
By similarity.
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-i- SIMILARITY: Belongs to the glycosyl hydrolase 27 family.
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Nucleophile (By similarity).
Proton donor (By similarity).
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PROSITE; PS00512; ALPHA_GALACTOSIDASE; 1.
Glycoprotein; Glycosidase; Hydrolase; Lysosome; Signal.
SIGNAL
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EMBL; L46651; AAA74453.1; -; Genomic DNA.

EMBL; U58105; AAB47244.1; -; Genomic_DNA.

EMBL; U50716; AAC52584.1; -; MENA.

EMBL; U50715; AAC52583.1; -; Genomic_DNA.
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SMR; P51569; 32-418
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Kawai J. Shinagawa A., Shibata K., Yoshino M., Itoh M., Iehii Y., Rawai J., Shinagawa A., Shibata K., Yoshino M., Itoh M., Iehii Y., Rawai J., Shinagawa A., Shibata K., Yoshino M., Itoh M., Iehii Y., Arawawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S., Arawawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S., Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R., Saito T., Masukawa T., Saito R., Ashburner M., Batalov S., Casavannt T., Saito T., Masukawa T., Sizuki R., Tomita M., Magner L., Washio T., Sakai R., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G., Baraki K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G., Baraki K., Okido T., Futuno M., Hume D.A., Kamiya M., Lee N.H., Gustincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H., Gunstincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H., Lyons P., Marchionni L., Mashian J., Mazzarelli J., Mombaerts P., Nordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N., Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F., Suzuki H., Toyo-oka K., Wang K.H., Weitz C., Whittaker C., Wilming L., Washaraki Y., Kawaji H., Kohtsuki S.,
                                                                                                                                                                     01-MAR-2003 (TrEMBLrel. 23, Created)
01-MAR-2003 (TrEMBLrel. 23, Last sequence update)
01-FEB-2005 (TrEMBLrel. 29, Last annotation update)
MUS musculus 0 day neonate thymus CDNA, RIKEN full-length enriched
library, clone:A430057F16 product:galactosidase, alpha, full insert
sequence (Mus musculus 2 days pregnant adult female ovary cDNA, RIKEN
full-length enriched library, clone:E330039P08 product:galactosidase,
alpha, full insert sequence).
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MEDLINE=99279253; PubMed=10349636; DOI=10.1016/S0076-6879(99)03004-9;
Carninci P., Hayashizaki Y.;
"High-efficiency full-length cDNA cloning.";
Meth. Enzymol. 303:19-44(1999).
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Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Sciurognathi;
                                                                                              421 AA
                                                                                              PRT;
                                                                                         QBBGZ6_MOUSE PRELIMINARY;
Q8BGZ6;
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9 9 MOLRNPELHLGCALALRFLALVSWDIPGARALDNGLARTPTMGWLHWERFMCNLDCOEEP Н

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Gaps ö

Indels

20; 1.1e-144;

41; Mismatches

Matches 327; Conservative

Local Similarity

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Query Match

78.3%; Score 1811; DB 1; Length 419; 78.2%; Pred. No. 1.1e-144;

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RA MEDLINE=22354683; PubMed=12466851; DOI=10.1038/nature01266;

RA MEDLINE=22354683; PubMed=12466851; DOI=10.1038/nature01266;

RA Mikaido I., Obato N., Saito R., Suzuki H., Yamanaka I., Kiyosawa H.,

RA Maji K., Tomaru Y., Hasegawa Y., Nogami A., Schonbach C., Gojobori T.,

RA Baldarelli R., Hill D.P., Bult C., Hume D.A., Quackenbush J.,

RA Baldarelli R., Hill D.P., Bult C., Hume D.A., Quackenbush J.,

RA Baldarelli R., Hill D.P., Bult C., Hume D.A., Corbani L.E., Cousins S.,

RA Gasterland T., Gariboldi M., Gissi C., Godzik A., Gough J.,

RA Gasterland T., Gariboldi M., Gissi C., Godzik A., Gough J.,

RA Gasterland T., Marchiomi L., McKenzie L., Miki H.,

RA Gasterland T., Marchiomi L., McKenzie L., Miki H.,

RA Magashima T., Numata K., Okido T., Pavan W.J., Pertea G., Pesole G.,

RA Rawaj T., Reed J.C., Reed D.J., Reid J., Ring B.L.,

RA Ravai T., Reed D.J., Reid J., Ring B.Z., Ringwald M.,

RA Sultana R., Takenaka Y., Taylor M.S., Teasdale R.D., Tomita M.,

Sultana R., Takenaka Y., Taylor M.S., Teasdale R.D., Tomita M.,

RA Wilming L.G., Wyrshaw-Boris A., Yang I., Yang I.,

RA Wilming L.G., Wyrshaw-Boris A., Yang I., Yang I.,

RA Hirozane-Kishikawa T., Konno H., Nakamura M., Sakazume N., Sato K.,

RA Hara A., Hashizume W., Imotani W., Itoh M., Kagawa I.,

RA Marzaki A., Sakai K., Sasaki D., Shibata K., Shinagawa H.,

RA Yasanishi A., Yoshino M., Waterston R., Lander E.S., Rogers J.,

RA Hara A., Hashizume W., Materston R., Lander E.S., Rogers J.,

RA Maralysis of the mouse transcriptome based on functional annotation of

RA Wallans R. Wall K., Sasaki D., Shibata K., Shiragawa I.,

RA Maralysis of the mouse transcriptome based on functional annotation of
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Adachi J., Aizawa K., Akimura T., Arakawa T., Bono H., Carninci P.,
Adachi J., Aizawa K., Akimura T., Arakawa T., Bono H., Carninci P.,
Adachi J., Aizawa K., Akimura T., Hara A., Hashizume W.,
A Hayashida K., Hayatsu N., Hiramoto K., Hiraoka T., Hirozane T.,
A Hori F., Imotani K., Ishii Y., Itoh M., Kagawa I., Kasukawa T.,
A Hori F., Imotani K., Ishii Y., Itoh M., Kagawa I., Kasukawa T.,
A Katoh H., Kawai J., Kojima Y., Kondo S., Konno H., Kouda M., Roya S.,
A Katoh H., Kawai J., Kojima Y., Ohoo M., Ohsato N., Okazaki Y.,
A Nishi K., Nomura K., Numazaki A., Muranta M., Nakamura M.,
A sato R., Saitoh H., Sakai C., Sakai K., Sakazume N., Sano H.,
A sato R., Shinagawa A., Shiraki T., Sogabe Y., Tagami M.,
A Tomaru A., Takahashi F., Takaku-Akahira S., Takeda Y., Tanaka T.,
A Tomaru A., Toya T., Yasunishi A., Muramatsu M., Hayashizaki Y.;
Submitted (JUL-2001) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NUCLECTIDE SEQUENCE.

STRAIN=C57BL/60; TISSUE=Ovary, and Thymus;
STRAIN=2030913; PubMed=11076861; DOI=10.1101/gr.152600;
A MEDLINE=2030913; PubMed=11076861; DOI=10.1101/gr.152600;
A Konno H., Akiyama J., Nishi K., Kitsunai T., Tashiro H., Itoh M., Sumi N., Ishiia T., Maramura S., Hazama M., Nishine T., Harada A., A Vamamoto R., Matsumoto H., Sakaguchi S., Ikegami T., Kashiwagi K., A Tamake S., Inoue K., Togawa Y., Izawa M., Ohara B., Watshiki M., Yoneda Y., Ishikawa T., Ozawa K., Tanaka T., Matsuura S., Kawai J., A Okazaki Y., Muramateu M., Inoue Y., Kira A., Hayashizaki Y.;
"RIKEN integrated sequence analysis (RISA) system-384-format sequencing pipeline with 384 multicapillary sequencer.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRAIN=C57BL/6J; TISSUE=Ovary, and Thymus; MEDLINE=20499374; PubMed=11042159; DOI-10.1101/gr.145100; MEDLINE=21049374; PubMed=11042159; DOI-10.1101/gr.145100; Carninci P., Shibata Y., Hayatsu N., Sugahara Y., Shibata K., Itoh M., Konno H., Okazaki Y., Muramatsu M., Hayashizaki Y.; "Normalization and subtraction of cap-trapper-selected cDNAs to prepare full-length cDNA libraries for rapid discovery of new genes."; Genome Res. 10:1617-1630(2000).
  'Functional annotation of a full-length mouse cDNA collection.";
                                                                                        STRAIN-C57BL/6J; TISSUE-Ovary, and Thymus;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Nature 420:563-573(2002).
                          Nature 409:685-690(2001).
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ANYVHSKGLKLGIYADVGNKTCAGFPGSFGYYDIDAQTFADWGVDLLKFDGCYCDSLENL 180
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DSCISEKLEMEMAELMVSEGWKDAGYEYLCIDDCWMAPQRDSEGRLQADPQRFPHGIRQL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GPRSYTIAVASLGKGVACNPACFITQLLPVKRKLGFYEWTSRLRSHINPTGTVLLQLE 418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 MQLRNPELHLGCALALRFLALVSWDIPGARALDNGLARTPTWGWLHWERFMCNLDCQEEP
                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Fugu rubripes (Japanese pufferfish) (Takifugu rubripes).
Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Actinopterygii; Neopterygii; Teleostei; Buteleostei; Neoteleostei;
Acanthomorpha; Acanthopterygii; Percomorpha; Tetraodontiformes;
Tetradontoidea; Tetraodontidae; Takifugu.
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0
                                                                                                                                                                                                                                                                                                      Length 421;
               EMBL, AKO54547; BAC35819.1; -; mRNA.

HSSP; P06280; 1R46.

SNR; Q8BGZ6; 34-40.

MG1; MG1:1347344; Gla.

MG2; GO:0005615; C:extracellular space; TAS.

InterPro; IPR002241; Glyco_hydro_GTD.

FEan; PP02065; Melibiase; I.

PEAN; PP02065; Melibiase; I.

PRINTS; PR00740; GLHYDRLASE27.

PRODOM; PD002572; Glyco_hydro_GHD; 1.

RRSJTE; PS00512; ALPHA GALACTOSIDASE; 1.

SEQUENCE 421 AA; 47844 MW; 5F66772334014B6F CRC64;
                                                                                                                                                                                                                                                                                                                                                 Indels
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Submitted (JAN-2001) to the EMBL/GenBank/DDBJ databases.
EMBL; AZ290422; CAC44626.1; -; Genomic_DNA.
HSSP; P06289; 1R46.
Ensembl; SINFRUG0000147523; Fugu rubripes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          to the EMBL/GenBank/DDBJ databases
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Last annotation update)
                                                                                                                                                                                                                                                                                                                                                   20;
                                                                                                                                                                                                                                                                                                    78.3%; Score 1811; DB 2;
78.2%; Pred. No. 1.1e-144;
iive 41; Mismatches 50;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             429 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-DEC-2001 (TrEMBLrel. 19, Created) 01-DEC-2001 (TrEMBLrel. 19, Last sequen-JUN-2003 (TrEMBLrel. 24, Last ann' Alpha galactosidase a.
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EMBL; AK040081; BAC30508.1;
EMBL; AK054547; BAC35819.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q90WL7 FUGRU PRELIMINARY;
                                                                                                                                                                                                                                                                                                                               Best Local Similarity 78.2%
Matches 327; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Goode D., Elgar G.;
Submitted (JUL-2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE.
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                                                                                                                                                                                                                                                                                                           Query Match
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the early vertebrate proto-karyotype.";
Nature 431:946-957(2004).
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NUCLEOTIDE SEQUENCE
                                                                                                                                                                                       Best Local Similarity
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                                                NUCLEOTIDE
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                                                                                                                                              SEQUENCE
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                                                                                                                                                                          Query Match
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       SPACCCCRRRRR
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NODPLGKOGYLSGKVDSFEVWERPLSKORLAIAVLNKOBIGGPRGFVIRAAGGWR--VCT 363
                                                                                                                                                                                                    79
                                                                                                                                                                                                                              99
GO; GO:0004553; F:hydrolase activity, hydrolyzing O-glycosyl . . .; IEA. GO; GO:0005975; P:carbohydrate metabolism; IEA. InterPro; IRR002241; Glyco hydro_27. InterPro; IRR00011; Glyco hydro_GHD. Pfam; PF02065; Melibiase; I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Jaillon O., Aury J.M., Brunet F., Petit J.L., Stange-Thomann N., Mauceli E., Bouneau L., Fischer C., Ozouf-Costaz C., Bernot A., Micalla G., Dossat C., Sequrens B., Dasilva C., Salanoubat M., Levy M., Boudet N., Castellano S., Anthouard V., Jubin C., Castelli V., Katinka M., Vacherie B., Blemont C., Skalli Z., Cattolico L., Poulain J., De Berardinis V., Cruado C., Duprat S., Brottier P., Coutanceau J.P., Gouzy J., Parra G., Lardier G., Chapple C., McKernan K.J., McEwan P., Bosak S., Kellis M., Volff JN., Guigo R., Zody M.C., Mesirov J., Lindblad-Toh K., Birren B., Nusbaum C., Kahn D., Robinson-Rechavi M., Laudet V., Schachter V., Outetier P., Saurin W., Scarpelli C., Wincker P., Lander E.S., Weissenbach J., Roest Crollius H.; "Genome duplication in the teleost fish Tetraodon nigroviridis reveals
                                                                                                                                                                                                 20 ALVSWDIPGARALDNGLARTPTMGWLHWERFMCNLDCQEEPDSCISEKLFMEMAELMVSE
                                                                                                                                                                                                                             ALVFLIGPAAEALDNGLALTPTMGWLHWERFMCNTDCDQDPDNCISERLFMQVADVMVKE
                                                                                                                                                                                                                                                                                                               KTCAGFPGSFGYYDIDAQTFADWGVDLLKFDGCYCDSLENLADGYKHMSLALNRTGRSIV
                                                                                                                                                                                                                                                                                                                                                                                          GGWNDPDMLVIGNFGLSWNQQVTQMALWAIMAAPLFMSNDLRHISPQAKALLQDKDVIAI
                                                                                                                                                                                                                                                                                                                                                                    200 YSCEWPLYMWPPQKPNYTEIRQYCNHWRNFADIDDSWKSIKSILDWTSFNQERIVDVAGP
                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Tetraodon nigroviridis (Green puffer).
Metazota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi; Actinopterygii; Neopterygii; Teleostei; Buteleostei; Neoteleostei; Acanthomorpha; Acanthomorpha; Acanthomorpha; Acanthopterygii; Percomorpha; Tetraodontiformes; Tetraodontoidea; Tetraodont
                                                                                                                                                                         3;
                                                                                                                                             2; Length 429;
                                                                                                                                                                       72; Indels
                                                                                                              48480 MW; 536A826D520CF01C CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 13-SEP-2005 (TrEMBLrel. 31, Created)
13-SEP-2005 (TrEMBLrel. 31, Last sequence update)
13-SEP-2005 (TrEMBLrel. 31, Last annotation update)
Chromosome 1 SCAF14998, whole genome shotgun sequence.
ORFNames=GSTENG00029285001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PACFITQLLPVKRKLGFYEWTSRLRSHINPTGTVLL 415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ||| :||:|| : :|
PACNVIQILPHYKDMGVQPMFSKMVVRVNPSGIVLL 399
                                                                                                                                        Query Match
64.0%; Score 1480.5; DB 2;
Best Local Similarity 68.4%; Pred. No. 1.1e-116;
Matches 271; Conservative 50; Mismatches 72;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           377 AA
                                                                     PRINTS; PR00740; GLHYDRLÀSE27.
PRODOM; PD002572; Glyco hydro GHD; 1.
PROSITE; PS00512; ALPHA GALACTOSIDASE; 1.
SEQUENCE 429 AA; 48480 MM; 536A826D5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q4RTE7_TETNG PRELIMINARY;
Q4RTE7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NUCLEOTIDE SEQUENCE.
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NCBI_TaxID=99883;
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194
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MEDLINE-22388257; PubMed=12477932; DOI=10.1073/pnas.242603899;

Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,

A Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,

A Optins R.F., Jordan H., Moore T., Max S.I., Wang J., Habich F.,

Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,

Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,

Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,

Richards S., Worley K.C., Hale S., Garcia A.M., Gaby E.A.,

Willalon D.K., Muzny D.M., Sodergren B.J., Lu X., Gibbs R.A.,

Villalon D.K., Muzny D.M., M. Madan A., Rodrigues S., Sanchez A.,

Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,

Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                242 PSAGPGGWNDPDMLVIGNFGLSHDQQESQMALWAIMAAPLLMSNDLRDICPRSKKLLQNR 301
                                                                                                                                                                                                                                                                                                                                                                                                              62
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                                                                                                                                                                                                                                                                                                                                                    16 LRFLALVSWDI-PGARALDNGLARTPTMGWLHWERFMCNLDCQEEPDSCISEKLFMEMAE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LMVSEGWKDAGYEYLCIDDCWMAPQRDSEGRLQADPQRFPHGIRQLANYVHSKGLKLGIY
                                                                                                                                                                                                                                                                                                Gaps
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Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Actinopterygii; Neopterygii; Teleostei; Ostariophysi; Cypriniformes;
Cyprinidae; Danio.
                                                                                                                                                                                                                                                                                             2;
                                                   CAUTION: The sequence shown here is derived from an EMBL/GenBank/DDBJ whole genome shotgun (WGS) entry which preliminary data.
                                                                                                                                                                                                                                   Length 377;
      Genome Research;
                                                                                                                                                                                                                                                                                          48; Indels
Genoscope, Whitehead Institute Centre for Genome Research
Submitted (FEB-2004) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                     CAAE01014998; CAG08335.1; -; Genomic DNA.
NCE 377 AA; 42048 MW; 236F4E5A95B9F1A8 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                54.8%; Score 1267; DB 2; 72.1%; Pred. No. 1.2e-98; ive 38; Mismatches 48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    338 AA
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                                                                                                                                                                                                                                                                                       Matches 227; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QSXJT6_BRARE PRELIMINARY;
QSXJT6;
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P NOULD-20-2---
A DIRECTOR MGC Project;
A Director MGC Project;
B Submitted (OCT-2004) to the EMBL/GenBank/DDBJ databases.
B EMBL; B E0081309; AAH813209-1; -; mRNA.
DR EMBL; B E0081309; AAH813209-1; -; mRNA.
DR GO; GO:0004553; F:hydrolase activity, hydrolyzing O-glycosyl . . .; IEA.
DR GO; GO:000557; P:carbohydrate metabolism; IEA.
DR InterPro; IPR002141; Glyco-hydro-GHD.
DR InterPro; IPR00111; Glyco-hydro-GHD.
DR PRINTS; PR00740; GLHYDRLASEZ7.
DR PRINTS; RR00740; GLHYDRLASEZ7.
DR PROD02572; Glyco-hydro-GHD; 1.
DR PROD03572; Glyco-hydro-GHD; 1.
SEQUENCE 338 AA; 37846 MM; A3FC5C461B7C9649 CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          46 GLKLGIYADVGTKTCAGYPGSLGYYDIDAKTFADWGVDLLKFDGCFMPDWHQLGEGYINM 105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SLALNRTGRSIVYSCEWPLYMWPPQKPNYTEIRQYCNHWRNFADIDDSWKSIKSILDWTS 247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FNQERIVDVAGPGGWNDPDMLVIGNFGLSWNQQVTQMALWAIMAAPLFMSNDLRHISPQA 307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GLKLGIYADVGNKTCAGFPGSFGYYDIDAQTFADWGVDLLKFDGCYCDSLENLADGYKHM 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2 LDMSLCALMIA-GLRNKG-----THRGACRQTPKGFPVASKKLADYVHSK 45
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                                                                                    human
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MEDLINE=22388257; PubMed=12477932; DOI=10.1073/pnas.242603899;
Straubberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
Klausner R.D., Collins F.S., Wagner L., Shemmen C.M., Schuler G.D.,
Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Heiteh F.,
Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
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Amphibia; Batrachia; Anura; Mesobatrachia; Pipoidea; Pipidae;
Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Butterfield Y.S.N., Krzywinski M.L., Skalska U., Smailus D.E., Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.; Ghein J.E., Jones S.J.M., Marra M.A.; "Generation and initial analysis of more than 15,000 full-length in the state of the 
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05-JUL-2004 (TrEMBLrel. 27, Last sequence update)
05-JUL-2004 (TrEMBLrel. 27, Last annotation update)
                                                                                                                and mouse cDNA sequences.";
Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             48.8%; Score 1130; DB 2; 60.3%; Pred. No. 4.1e-87; tive 47; Mismatches 75;
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Name=LOC443592;
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QGQ17;
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NUCLEOTIDE SEQUENCE.
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9 123 301 310 HISPQAKALLQDKDVIAINQDPLGKQGYQLRQGDNFEVWERPLSGLAWAVAMINRQEIGG 361 413 131 71 .; IEA. Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E., Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C., Braha S.S., Loquellano N.A., Peters G.J., Abrameon R.D., Mullahy S.J., Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H. Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W., Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A., Mhiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G., Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C., Surcher R.D., Dickson M.C., Sutterfield Y.S.M., Krzywinski M.I., Skalska U., Smailus D.E., Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.; Schill human deneration and initial analysis of more than 15,000 full-length human PRSYTIAVASLGKGVACNPACFITQLLP------VKRKLGFYEWTSRLRSHINPTGTV 124 VHSKGLKLGIYADVGNKTCAGFPG-SFGYYDIDAQTFADWGVDLLKFDGCYCDSLENLAD GYKHMSLALNRTGRSIVYSCEWPLYMWPF-OKPNYTEIRQYCNHWRNFADIDDSWKSIKS ILDWTSPNQERIVDVAGPGGWNDPDMLVIGNFGLSWNQQVTQMALWAIMAAPLFMSNDLR 18 RGYKMHLTSLCLLITLMGLCW-----CLDNGLVRTPEMGWMTWQRYRCNIDCKSDPDNC 64 ISEKLFMEMAELMVSEGWKDAGYEYLCIDDCWMAPQRDSEGRLQADPQRFPHGIRQLANY 4 RNPELHIGCALALRFLALVSWDIPGARALDNGLARTPTMGWLHWERFWCNLDCQEEPDSC Gaps Klein S., Gerhard D.S.;
Submitted (JUN-2004) to the EMBL/GenBank/DDBJ databases.
Submitted (JUN-2004) to the EMBL/GenBank/DDBJ databases.
EMBL; BC072931; PAH72931.1; -; mRNA.
GO; GO:0004553; F:hydrolase activity, hydrolyzing O-glycosyl ...
GO; GO:0005975; P:carbohydrate metabolism; IEA.
InterPro; IPR002241; Glyco_hydro_GFD.
InterPro; IPR00111; Glyco_hydro_GFD.
Pfam; PF020065; Melibiase; 1. Klein S.L., Strausberg R.L., Wagner L., Pontius J., Clifton S.W., Richardson P., "Genetic and genomic tools for Xenopus research: The NIH Xenopus 27; Length 431; MEDLINE=22341132; PubMed=12454917; DOI=10.1002/dvdy.10174; 46.4%; Score 1074.5; DB 2; Length 49.3%; Pred. No. 2.8e-82; iive 62; Mismatches 126; Indels 4C578DB433983471 CRC64; Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002) PRINTS; PR00740; GLHYDRLASE27. ProDom; PD002572; Glyco_hydro_GHD; 1. PROSITE; PS00512; ALPHA_GALACTOSIDASE; 1. 431 AA; 48787 MW; initiative."; Dev. Dyn. 225:384-391(2002) mouse cDNA sequences." al Similarity 49.3 209; Conservative NUCLEOTIDE SEQUENCE. [3] NUCLEOTIDE SEQUENCE. TISSUE=Embryo; rissum=Embryo; NON TER SEQUENCE 183 191 242 302 362 Query Match Best Local S Matches 셤 g ò 셤 ò 유 ò ò 요 ઠ 셤 8

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Klein S., Gerhard D.S.;

Submitted (MAY-2004) to the EMBL/GenBank/DDBJ databases.

Submitted (MAY-2004) to the EMBL/GenBank/DDBJ databases.

EMBL; BCO71089; AAH71089.1; -; mRNA.

GO; GO:0004553; F:hydrolase activity, hydrolyzing O-glycosyl . .; IEA.

GO; GO:0005975; P:carbohydrate metabolism; IEA.

InterPro; IPR002241; Glyco_hydro_GHD.

Ffam; PF02065; Mellbiase; I.

PRINTS; PR00740; GHINTMAREZ?

PRODOM; PB0005572; GHYCO_Hydro GHD; 1.

PRODOM; PB0005572; GLYCO_hydro GHD; 1.

PROSITE; PS00512; ALPHA_GALACTOSIDASE; 1.
                                                                                                                                                                                                                                                                                                                                Xenopus laevis (African clawed frog).
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Amphibia, Batrachia, Anura, Mesobatrachia, Pipoidea, Pipidae,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Klein S.L., Strausberg R.L., Wagner L., Pontius J., Clifton S.W., Richardson P.;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE=22341132; PubMed=12454917; DOI=10.1002/dvdy.10174;
                                                                                                                                                                                                           05-JUL-2004 (TrEMBLrel. 27, Created)
05-JUL-2004 (TrEMBLrel. 27, Last sequence update)
05-JUL-2004 (TrEMBLrel. 27, Last annotation update)
                                                                                                                                                                 400 AA.
                                                                                                                                                                   PRT;
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Best Local Similarity 51.0%
Matches 201; Conservative
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QGGR44;
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                                                                                                                                                                                                                                                                                   MGC81044 protein.
Name=MGC81044;
LLQL 417
                                               FLFL 424
                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI TaxID=8355;
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414
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This Swiss-Prot entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the Buropean Bioinformatics Institute. There are no restrictions on its use as long as its content is in no way modified and this statement is not
                                                                                  67 DDCWSQKQRDSNGRLQPDLERFPSGWKALADYVHAKGLKLGIYSDMGTYTCGGYPGTTLD 126
                                                                                                                                                                                                                                               186 LPPKVNYTQLGSICNMWRNYGDIQDSWDSVLDIIEWYAKNQDVLQPAAGPGRWNDPDMLI 245
                                                                                                                                                                                                                                                                                                                           246 TGDFGLSYEQSKSQLAIWAILAAPLIMSNDLRTISQDAKDLLQNRLLIYINQDALGKQGS 305
                                                                                                                                                                                                                                                                                                                                                                                      330 OLROGDNFEVWERPLSGLAWAVAMINRQEIGGPRSYTIAVASLGKGVACNPACFITQLLP 389
                                                                                                                                                                                                                                                                                                                                                                                                             DDCWMAPQRDSEGRLQADPQRFPHGIRQLANYVHSKGLKLGIYADVGNKTCAGFPG-SFG 150
                                                                                                                                          151 YYDIDAQTFADWGVDLLKFDGCYCDSLENLADGYKHMSLALNRTGRSIVYSCEWPLYMWP 210
                                                                                                                                                                                                                                                                                                        270 IGNFGLSWNQQVTQMALWAIMAAPLFWSNDLRHISPQAKALLQDKDVIAINQDPLGKQGY 329
                     99
127 TIKIDAETFASWEVDMLKFDGCYSNSTEK-ALGYPKMSBALNGTGRPILYSCSWPAYEGG
                                                                                                                                                                                                                          211 F-QKPNYTEIRQYCNHWRNFADIDDSWKSIKSILDWTSFNQERIVDVAGPGGWNDPDMLV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       13-SEP-2005 (Rel. 48, Last sequence update)
13-SEP-2005 (Rel. 48, Last sequence update)
13-SEP-2005 (Rel. 48, Last annotation update)
Alpha-N-acetylgalactosaminidase (EC 3.2.1.49) (Alpha-galactosidase B)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gallus gallus (Chicken).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE=94060104; PubMed=8241271; DOI=10.1016/0167-4781(93)90158-A;
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PubMed=12005440; DOI=10.1016/S0969-2126(02)00726-8;

Garman S.C., Hannick L., Zhu A., Garboczi D.N.;

The 1.9 A structure of alpha-N-acetylgalactosaminidase: molecular basis of glycosidase deficiency diseases.";

Structure 10:425-434(2002).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUCLECTIDE SEQUENCE [MRNA], AND PARTIAL PROTEIN SEQUENCE.
TISSUE=Liver;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               356 GYKMYNVFEKEYIGMFKSGTPIDMRVNPTGVIFL 389
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Biochim. Biophys. Acta 1216:296-298(1993).
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PDB, 1KTB, X-ray, A=1-405.
PDB, 1KTC, X-ray, A=1-405.
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(Fragment).
ORFNames=GSTENG00012743001;
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Q4STX0;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           180 LPPKVNYTLLGEICNLWRNYDDIQDSWDSVLSIVDWFFTNQDVLQPFAGPGHWNDPDMLI 239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       151 YYDIDAQTFADWGVDLLKFDGCYCDSLENLADGYKHMSLALNRTGRSIVYSCEWPLYMWP 210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        F-QKPNYTEIRQYCNHWRNFADIDDSWKSIKSILDWTSFNQERIVDVAGPGGWNDPDMLV 269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IGNFGLSWNQQVTQMALWALWAPLFMSNDLRHISPQAKALLQDKDVIAINQDPLGKQGY 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q-LRQGDNFEVWERPLSGLAWAVAMINRQEIGGPRSYTIAVASIGKGVACNPACFITQLL 388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DDCWMAPQRDSEGRLQADPQRFPHGIRQLANYVHSKGLKLGIYADVGNKTCAGFPG-SFG 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LDNGLARTPTMGWLHWERFWCNLDCQEEPDSCISEKLFWEMAELMVSEGWKDAGYEYLCI
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Bukaryota, Metazoa, Arthropoda, Hexapoda, Insecta, Pterygota,
Neoptera, Endopterygota, Diptera, Nematocera, Culicoidea, Culicidae,
Anophelinae, Anopheles.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
InterPro; IPR001211; Glyco_hydro_27.
PitarFro; IPR00111; Glyco_hydro_GHD.
Pfam; PF02065; Melibiase; 1.
PRINTS; PR00740; GLHYDRLASE27.
PRODOM; PD002572; Glyco_hydro_GHD; 1.
PROSITE; PS00512; ALPHA GALACTOSIDASE; 1.
3D_structure; Direct protein sequencing; Glycoprotein; Glycosidase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ..
                                                                                                                                                                                                                                                                                                           Alpha-N-acetylgalactosaminidase.
Nucleophile (By similarity).
Proton donor (By similarity).
N-linked (GlCNAc. . .).
N-linked (GlCNAc. . .).
N-linked (GlCNAc. . .).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           45.4%; Score 1051; DB 1; Length 405; larity 53.0%; Pred. No. 2.5e-80; Conservative 58; Mismatches 117; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The Anopheles gambiae Sequence Committee; "Anopheles gambiae re-annotation."; Submitted (APR-2002) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 45615 MW; E1EC0061739C305C CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-MAR-2004 (TrEMBLrel. 26, Created)
01-MAR-2004 (TrEMBLrel. 26, Last sequence update)
01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
ENSANGE00000020847 (Fragment).
ORFNames=ENSANGG00000018358;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PVKRKLGFYEWISRLRSHINPIGTVLLQL 417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 412
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
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Q7Q1V0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                [1]
NUCLEOTIDE SEQUENCE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            171
405 AA;
                                                                                                                                                                                                                                                                                       Hydrolase; Lysosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=180454;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 206;
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                                                                                                                                                                                                                                                                                                                                                                                                 ACT_SITE
CARBOHYD
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CARBOHYD
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                                                                                                                                                                                                                                                                                                                                                                ACT_SITE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
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Matches
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91 IDDCWMAPQRDSEGRLQADPQRFPHGIRQLANYVHSKGIKLGIYADVGNKTCAGFPGSFG 150
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                210 PPQKPNYTEIRQYCNHWRNFADIDDSWKSIKSILDWTSFNQERIVDVAGPGGWNDPDMLV 269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      196 AGMNPNYSSIIQHCNLWRNYDDIQDSWASLESIIDYYGNNQDAIIPNAGPGHWNDPDMLI 255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                IGNFGLSWNQQVTQMALWAIMAAPLFMSNDLRHISPQAKALLQDKDVIAINQDPLGKQGY 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      256 IGNFGLSYEQSKTQMALWAIMAAPLMMSVDLRTIRPEFKAILQNRKIIAVDQDPLG1QGR 315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QLRQGDNFEVWERPLSGL----AWAVAMINRQEIGGPRSYTIAVASLGKGVACNPACFI 384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          31 ALDNGLARTPTMGWLHWERFMCNLDCQEEPDSCISEKLFMEMAELMVSEGWKDAGYEYLC 90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SLENGLARIPPMGWLSWERFRCNTDCEGDPENCISEHLFRIMADLVVSEGYAAVGYEYIN 76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
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Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Neoteleostei;
Actinopterygii; Neopterygii; Teleostei; Buteleostei; Neoteleostei;
Acanthomorpha; Acanthopterygii; Percomorpha; Tetraodontiformes;
Tetradontoidea; Tetraodontidae; Tetraodon.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            13-SEP-2005 (TrEMBLrel. 31, Created)
13-SEP-2005 (TrEMBLrel. 31, Last sequence update)
13-SEP-2005 (TrEMBLrel. 31, Last annotation update)
Chromosome undetermined SCAP14084, whole genome shotgun sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUCLEOTIDE SEQUENCE.
Jaillon O., Aury J.M., Brunet F., Petit J.L., Stange-Thomann N.,
Mauceli E., Bouneau L., Fischer C., Ozouf-Costaz C., Bernot A.,
                                                                                                                               preliminary data.

EMBL, AAABO1008980; EAA14548.2; -; Genomic DNA.

GO, GO:00045375; P:hydrolase activity, hydrolyzing O-glycosyl.

GO, GO:0005975; P:carbohydrate metabolism; IEA.

InterPro; IPR002241; Glyco_hydro_27.

InterPro; IPR00111; Glyco_hydro_GHD.

Pfam; PP02065; Melibiase; I.

PRINTS; PR00740; GLHYDRLASE27.

ProDom; PD002572; Glyco_hydro_GHD; 1.
                                                                                                which is
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 412;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 45.4%; Score 1050; DB 2; Length 4
49.0%; Pred. No. 3.1e-80;
ive 72; Mismatches 119; Indels
The Anopheles gambiae Sequence Committee;
Submitted (APR-2004) to the EMBL/GenBamk/DDBJ databases.
-!- CAUTION: The sequence shown here is derived from an
EMBL/GenBank/DDBJ whole genome shotgun (WGS) entry w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                46517 MW; 4C91C8FB9EA6C88F CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          385 TQLLPVKRKLGFYEWTSRLRSHINPTGTVLLQLE 418
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Ephydroidea; Drosophilidae; Drosophila.
NCBL_TaxID=7227;
    8
                                                                                                                                                                                                                                                                                                                                                                         186
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                                                                                                                                                                                                                                                                                                                                                                                                                    364
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                                                                                                                                                                                                                                                                                                                   67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   54
Nicaud S., Jaffe D., Fisher S., Lutfalla G., Dossat C., Segurens B., Dasilva C., Salanoubat M., Levy M., Boudet N., Castellano S., Anthouard V., Jubin C., Castelli V., Katinka M., Vacherie B., Biemont C., Skalli Z., Catcolico L., Poulain J., De Berardinis V., Cruaud C., Duprat S., Brottier P., Coutanceau J.P., Gouzy J., Parra G., Lardier G., Chapple C., McKernan K.J., McEwan P., Bosak S., Kellis M., Volff JN., Guigo R., Zody M.C., Meslrov D., Robinson-Rechavi M., Lindblad-Toh K., Birren B., Nusbaum C., Kahn D., Robinson-Rechavi M., Wincker P., Lander E.S., Weissenbach J., Roest Crollius H.; Wincker P., Lander E.S., Weissenbach J., Roest Crollius H.; "Genome duplication in the teleost fish Tetraodon nigroviridis reveals the early vertebrate proto-karyotype.";
                                                                                                                                                                                                                                                                                                                 LHLGCALALRFLALVSWDIPGARALDNGLARTPTMGWLHWERFMCNLDCQEEPDSCISEK
                                                                                                                                                                                                                                                                                                                               GLKLGIYADVGNKTCAGFPGS-FGYYDIDAQTFADWGVDLLKFDGCYCDSLENLADGYKH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 246 TSFNQERIVDVAGPGGWNDPDMLVIGNFGLSWNQQVTQMALWAIMAAPLFMSNDLRHISP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            306 QAKALLQDKDVIAINQDPLGKQGYQL-RQGDNFEVWERPLSGLAWAVAMINRQEIGGPRS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MSLALNRTGRSIVYSCEWPLYMWPF-QKPNYTEIRQYCNHWRNFADIDDSWKSIKSILDW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        365 YTIAVASLGKGVACNPACPITQLLPVKRKLGFYE----WTSRLRS-----HINPTG
                                                                                                                                                                                                                                                                                            Indels 42; Gaps
                                                                                                                                                                    Genoscope, Whitehead Institute Centre for Genome Kebearcu;
Submitted (FEB-2004) to the EMBL/GenBank/DDBJ databases.
-!- CAUTION: The sequence shown here is derived from an
EMBL/GenBank/DDBJ whole genome shotgun (WGS) entry which is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
                                                                                                                                                                                                                                                                      DB 2; Length 410;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
                                                                                                                                                                                                                                                410 AA; 46172 MW; F5C661DA72DCEE88 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-MAY-2000 (TrEMBLrel. 13, Created)
01-OCT-2002 (TrEMBLrel. 22, Last sequence update)
01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
CG5731-PA.
                                                                                                                                                                                                                                                                      Query Match
44.9%; Score 1038; DB 2;
Best Local Similarity 48.9%; Pred. No. 3.2e-79;
Matches 207; Conservative 58; Mismatches 116;
                                                                                                                                                                                                                          CAAE01014084; CAF95912.1; -; Genomic_DNA.
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Q9VL27;
                                                                                                                                                                                                                 preliminary data.
                                                                                                                                                          NUCLEOTIDE SEQUENCE
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RW NUCLEOTIDE SEQUENCE.

RA MEDIANES-20196006; Pubmed=10731132; DDI=10.1126/science.287.5461.2185;

Adams M.D. Celliker S.E. Li P.M., Hoskins C.A., Gocayne J.D.,

RA Adams M.D., Celliker S.E. Li P.M., Hoskins R.A., Galle R.F.,

George R.A., Lewis S.E., Richards S.A., Anbuncher M., Henderson S.N.,

Sutton G.G., Wortman J.R., Yandell M.D., Zhang G., Chen L.X.,

Brandon R.C., Rogers Y.-H.C., Blazel R.G., Champe M., Pfelffers B.D.,

RA Brandon R.C., Rogers Y.-H.C., Helt G., Nelson C.R., Miklos G.L.G.,

RA Bardon R.C., Rogers Y.-H.C., Blazel R.G., Champe M., Pfelffers B.D.,

RA Ballew R.M., Basu A., Baranan B.P., Bhandari D., Bessley E.M.,

Beeson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S.,

RA Butris K.C., Busam D.A., Burler H., Cadieu E., Center A., Clandra I.,

RA Butris K.C., Busam D.A., Buller H., Cadieu E., Center A., Clandra I.,

RA Butris K.C., Busam D.A., Buller H., Cadieu E., Center A., Clandra I.,

RA Butris K.C., Busam D.A., Buller H., Cadieu E., Center A.,

Butris K.C., Busam D.A., Burler H., Cadieu E., P., Brother P., Brothies P.,

RA Butris K.D. Delcher A., Deng Z., Mays A.D., Dew I., Diet Z. S.M.,

RA Patris N.L., Harvey D.A., Heiman T.J., Hernandez J.R., Houck J.,

RA Godson K.J., Evangelista C.C., Perrac C., Ferrica S., Punkov B.C., Dunn P.,

Duckon K., Doup L.B., Downes M., Dugan-Rochs S., Dunkov B.C., Dunn P.,

Butris N.L., Harvey D.A., Heiman T.J., Hernandez J.R., Houck J.,

RA Harris N.L., Harvey D.A., Heiman T.J., Hernandez J.R., Houck J.,

RA Harris N.L., Harvey D.A., Heiman T.J., Wein M.P., Mersen D.,

Alalai M., Kalush F., Karpen G.H., Ka Z., Kannison J.A., Recchum K.A.,

But N. Matchi B.B., McIncoh T.C., Morried J., Morries D., Morries J., Mosherefi A.,

RA Butris K., Matchi B., McIncoh T.C., Morried J., Morries D., Scheler F., Shen H.,

RA Butris S.M., Woodge T., Wunder R., Wang A., Wang X.,

Ranger K., Spradling A.C., Staphecon M., Stupes R., Sprich H., Wang Z.-Y., Wassarman D.A., Weinstock G.M., Wang S., Yao Q.A.,

RA Rheng K., Zhom R., Rubinstock G.M., Wang S., Yao Q.A.,

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MEDLINE-22426070; PubMed=12537573;
Kaminker J.S., Bergman C.M., Kronmiller B., Carlson J.W., Svirskas Patel S., Prise B., Wheeler D.A., Lewis S.E., Rubin G.M.,
Ashburner M., Celniker S.E.;
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Genome Biol. 3:RESEARCH0084.1-RESEARCH0084.20(2002).
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                                                                                                                                                                                                                                                                                                                         Intact, 90127; ...
Intact, 90127; ...
Ensembl; CG5731; Drosophila melanogaster.
Flybase; FBGN03192; CG5731.
GO; GO:0004553; F:hydrolase activity, hydrolyzing O-glycosyl . . .; IEA.
GO; GO:0005575; P:carbohydrate metabolism; IEA.
InterPro; IPR00241; Glyco_hydro_27.
InterPro; IRR000111; Glyco_hydro_GHD.
Ffam; PF02065; Melibiase; I.
PRINTS; PR00740; GLHYDRASE27.
PROSITE; PS00512; ALPHA GALACTOSIDASE; 1.
SEQUENCE 413 AA; 47047 MW; 9ADE417E7592782D CRC64;
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                                                                                                      Berkeley Drosophila Genome Project; Celniker S., Carlson J., Wan K., Pfeiffer B., Frise E., George R. Hoskins R., Stapleton M., Pacleb J., Park S., Svirskas R., Smith Yu C., Rubin G., Rubin G., Brosophila melanogaster release 4 sequence."; Submitted (MAR-2000) to the EMBL/GenBank/DDBJ databases.
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Lewis S.E.; Annotation of the Drosophila melanogaster euchromatic genome: a systematic review."; Genome Biol. 3:RESEARCH0083.1-RESEARCH0083.22(2002).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 44.6%; Score 1031; DB 2; Length 413; Best Local Similarity 46.7%; Pred. No. 1.3e-78; Matches 192; Conservative 81; Mismatches 126; Indels 1.
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Submitted (MAR-2005) to the EMBL/GenBank/DDBJ databases.
EMBL; AE003627; AAF52871.2; -; Genomic_DNA.
HSSP; Q90744; 1KTB.
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Search completed: December 24, 2005, 08:58:15 Job time: 234 secs

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BT006864 Homo sapi
AY889631 Synthetic
AY889032 Synthetic
AY892090 Synthetic
BT007835 Synthetic
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AR653693 Sequence
AR654961 Sequence
AR654961 Sequence
AR6729 Human mRNA
AR101984 Sequence
BD064229 Therapy f
BD247365 Treatment
CS105027 Sequence
AR324439 Sequence
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CS033758 Sequence
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Unclassified.
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Garger,S.J., Turpen,T.H. and Kumagai,M.H.
Garger,S.J., Tyosoomal enzymes in plants by transient expression
Patent: US 6887696-A 11 03-MAY-2005,
Large Scale Biology Corporation; Vacaville, CA
Location/Qualifiers
                                            Sequence
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 AR654962
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CS135670
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Sequence 11 from patent US 6887696.
AR653696
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AR654962
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-MODEL=frame+ p2n.model -DEV=xlp
-MODEL=frame+ p2n.model -DEV=xlp
-MODEL=frame+ p2n.model -DFV=xlp
-Cgnz_1/USFPC_spool_p/US1060219/runat_23122005_151141_17136/app_query.fasta_1.583
-DG=Cgnz_1/USFPC_spool_p/US10602219/runat_23122005_151141_17136/app_query.fasta_1.583
-DG=Cgnz_1 - CFWT=fasta_p - SUFFIX=p2n.rge - MXNMATCH=0.1 -LOOPCL=0 -LOOPEXT=0
-UNITS=bits -START=1 -END=-1 -MATRIX=blosum62 - TRANS=human40.cdi -LIST=45
-UNITS=bits -START=1 -END=-1 - MATRIX=blosum62 - ALIGN=15 - MODE=LOCAL
-OUTFWT=ptc - NORM=ext - HEAPSIZE=560 - MINLEN=0 -MAXIEN=200000000
-USER=US10602219_@CGN_1 1_7415_@runat_23122005_151141_17136 -NCPU=6 -ICPU=3
-NO_MMAP -LARREQUERY -NEG SCORES=0 - WAATT -DSPBALOK=100 -LONGLOG
-DSV_TIMEOUT=120 - WARN TIMEOUT=30 -THERADS=1 - XGAPPOP=10 - XGAPPOF=6
-FGAPEXT=7 - YGAPOP=10 - YGAPEXT=0.5 -DELOP=6 -DELEXT=7
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                                                       nucleic search, using frame_plus_p2n model
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	RESULT 2 AR654964 LOCUS DEFINITION Sequence 11 from patent US 6890748. ACCESSION AR654964 VERSION AR654964 IG:67586503 KEYWORDS SOURCE Unknown. ORGANISM Unclassified. REFERENCE I (Dasses 1 to 1266) AUTHORS AUTHORS AUTHORS AUTHORS TITLE Patent: US 6890748-A 11 LO-MAY-2005; Large Scale Biology Corporation; Vacaville, CA	MINTEES SOURCE GIN GIN GON GON GON GON GON SON GON GO	Gaps: 4 (1-1266) uLeuhisLeuGlyCysAlai
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1 (bases 1. Turpen, T.H. and Kumagai, M.H. Garger, S.J., Turpen, T.H. and kumagai, M.H. Production of lysosomal enzymes in plants by Patent: US 6887656-A 7 03-MAY-2005, Large Scale Biology Corporation; Vacaville, Location/Qualifiers
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Garger,S.J., Turpen,T.H. and Kumagai,M.H.
Production of lysosomal enzymes in plants by transient expression
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Large Scale Biology Corporation; Vacaville, CA
Location/Qualifiers
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Garger,S.J., Tuysosomal enzymes in plants by transient expression
Patent: US 6890748-A 3 10-MAY-2005;
Large Scale Biology Corporation; Vacaville, CA
Location/Qualifiers
                                                                                                                                                                                 GlnTyrCysAsnHisTrpArgAsnPheAlaAspIleAspAspSerTrpLysSerIleLys
                                                                               GlyTrpAsnAspProAspMetLeuVallleGlyAsnPheGlyLeuSerTrpAsnGlnGln
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Oy 301 ArgHisTleSerProGlnalaLysAlaLeuLeuGlnAspLysAspValIleAlaIleAsn 320	Qy 381 AlaCysPhelleThrGlnLeuLeuProValLysArgLysLeuGlyPheTyrGluTrpThr 400 Db 1141 GCTGCTTCATCACAGGTCCTCCTGTGAAAGGAAGCTAGGGTTCTATGAATGGACT 1200 Qy 401 SetArgLeuArgSerHislleAsnProThrGlyThrValLeuLeuGlnLeuGluAsnThr 420 Db 1201 TCAAGGTTAAGAAGCTCATAAAATCCCACAGGCACTGTTTGCTTCAGCTAGAAACACA 1260	Qy 421 Met 421 Db 1261 ATG 1263 RESULT 10 BT006864 1290 bp mRNA linear PRI 13-MAY-2003 LOCUS LOCUS	ITION Homo sapiens galactosidase, alpha mRNA, complete cds. SION BT006864 BT006864. GI:30582566 RDS FLI_CDNA. E Homo sapiens (human) ANISM Homo sapiens Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Butele		DUCKNAL Unpublished REFERENCE 2 (bases 1 to 1290) AUTHORS Kalnine,N., Chen,X., Rolfs,A., Halleck,A., Hines,L., Eisenstein,S., AUTHORS Kalnine,N., Chen,X., Rolfs,A., Halleck,A., Hines,L., Eisenstein,S., Koundinya,M., Raphael,J., Moreira,D., Kelley,T., LaBaer,J., Lin,Y., Phelan,M. and Farmer,A. TITLE Direct Submission JOURNAL Submitted (13-MAY-2003) BD Biosciences Clontech, 1020 East Meadow Circle, Palo Alto, CA 94303, USA COMMENT This CDS clone is a part of a collection of human full length	Harvard Institute of Proteonics. Each CDS has been cloned in two forms: with and without stop-codon (to allow fusion with C-terminal tagy). The CDS has been directionally cloned using BD In-Pusion(TM) cloning system between the SalI and HindIII sites of the pDNR-DVAL vector. Additional sequences in the clone: 'ACC' after SalI site and before 'ATG' to provide Kozak consensus sequence; 'GG' after last codon and before HindIII site to maintain reading frame. Clone distribution: http://bioinfo.clontech.com/orfclones. 1. 1290 /organism="HOmo sapiens" //mol type="maxNa" //mol type="maxNa"	.stant"

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ERGLQDDPQRPPHGI RQLAMYVHSKGLKGI YADVGNKTCAGFPGSFGYYD I DAGYFD
BWGVDLIKPGCYCZISLENIAADGYKHWSLALIRTGRS I VYSCEWPLYWPYCRENYT
I RQYCNHWRNPADI DDSWKSI KSI LDWTSFNQERI VDVAGFGGWNDPDMLVI GNFGLS
DNFGVWERFLOSGYCZISLENIABGYKHWISLALIQNDVI AINQDPLGKQGYQLKG
DNFFWWERFLOSGYCZISLENIARGYGRYFT AVASLGKGVACNPACFIC
RGFYEWTSRLRSHINPTGTVLLQLENTWQMSLKDLI."
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  Each clone
before 'ATG' to provide Kozak consensus sequence. I clonally isolated and full-length sequence-verified Location/Qualifiers
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/lab_host="FLH025769.01x"
/lab_host="Escherichia coli DH5alpha T1
/note="derived from MGC template"
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Matches:
Conservative:
Mismatches:
Indels:
                                                                                 'organism="synthetic construct"
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/db_xref="GI:60655717"
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                                                                                                  /mol_type="mkNA"
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2314.00
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Submitted (04-JAN-2005) Biological Chemistry and Molecular
Submitted (04-JAN-2005) Biological Chemistry and Molecular
Pharmacology, Harvard Institute of Proteomics, 320 Charles St.,
Cambridge, MA 02141, USA
This CDS clone is a part of a collection of human full-length
expression clones generated by Harvard Institute of Proteomics.
This ORF clone has been cloned with normalized stop-codon. The CDS
has been directionally cloned using BD In-Fraison(TM) cloning system
between the Sall and HindIII sites of the pDNR-bual wector.
Additional sequences in the clone: 'ACC' after Sall site and
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                                                                                                                                                                                                                                                                                                                                                                                CAGGACCCCTTGGGCAAGCAAGGGTACCAGCTTAGACAGGGAGACAACTTTGAAGTGTGG 1020
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Hines, L., Rolfs, Jepson, D., Moreira, D., Raphael, J., Kelley, F.,
Shen, B., Halleck, A., Koundinya, M., Hu, Y., Zuo, D., Taycher, E.,
Williamson, J. and LaBaer, J.
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Human ORF Project.

Bynthetic construct
synthetic construct
synthetic construct
other sequences, artificial sequences.

1 (bases 1 to 1290)
1 (bases 1 to 1290)
1 (bases 1, Rolfs, A., Jepson, D., Moreira, D., Raphael, J., Kelley, F., Shen, B., Halleck, A., Koundinya, M., Hu, Y., Zuo, D., Taycher, B.,
Williamson, J. and Labaer, J.

Cloning of human full-length CDS in Creator (TW) recombinational
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                       1021 GAACGACCTCTCTCAGGCTTAGCCTGGGCTGTAGCTATAGATAAACCGGCAGGAGATTGGT
                                                                                                         GlyTrpAsnAspProAspMetLeuVallleGlyAsnPheGlyLeuSerTrpAsnGlnGln
                                                                                                                                                 781 GGTTGGAATGACCCAGATATGTTAGTGATTGGCAACTTTGGCCTCAGCTGGAATCAGCAA
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                                                                                                                                                                                        ValThrGlnMetAlaLeuTrpAlaIleMetAlaAlaProLeuPheMetSerAsnAspLeu
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AUTHORS
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                                                                       Direct Submission Submission Submitted (04-JAN-2005) Biological Chemistry and Molecular Pharvard Institute of Proteomics, 320 Charles St., Pharvard Institute of Proteomics, 320 Charles St., This CDS clone is a part of a collection of human full-length expression clones generated by Harvard Institute of Proteomics. This ORF clone has been cloned with normalized stop-codon. The CDS has been directionally cloned using BD In-Fusion(TM) cloning system between the Sall and HindIII sites of the pDNR-Dual vector. Additional sequences in the clone: 'ACC' affer Sall site and before 'ATG' to provide Kozak consensus sequence. Each clone is clonally isolated and full-length sequence-verified.
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Hines, L., Rolfs, A., Jepson, D., Moreira, D., Raphael, J., Kelley, F., Shen, B., Halleck, A., Koundinya, M., Hu, Y., Zuo, D., Taycher, E., Williamson, J. and Labaer, J.
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/note="derived from MGC template"
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Synthetic construct Homo sapiens clone FLH025770.01X galactosidase
alpha (GLA) mRNA, complete cds.
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Human ORF Project.

Human ORF Project.

Hyperhetic construct

Synthetic construct

Synthetic construct

Other sequences; artificial sequences.

(bases 1 to 1290)

Humes, L., Rolfs, A., Koundinya, M., Hu, Y., Zuo, D., Taycher, E.,

Williamson, J. and LaBaer, J.

Williamson, J. and LaBaer, J.

Cloning of human full-length CDS in Creator (TM) recombinational
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GlnTyrCysAsnHisTrpArgAsnPheAlaAspIleAspAspSerTrpLysSerIleLys
                                                                                                                                                                                                                                                                                    CAGTACTGCAATCACTGGCGAAATTTTGCTGACATTGATGATGATTCCTGGAAAAGTATAAAAG
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       GACTGGGGAGTAGATCTGCTAAAATTTGATGGTTGTTACTGTGACAGTTTGGAAAATTTG
                                                                                                                                                         SerCysGluTrpProLeuTyrMetTrpProPheGlnLysProAsnTyrThrGluIleArg
                                                                                                                                                                                   TCCTGTGAGTGGCCTCTTTATATGTGGCCCTTTCAAAAGCCCAATTATACAGAAATCCGA
                                                                                                                                                                                                                                                                                                                                                                                GTAACTCAGATGGCCCTCTGGGCTATGATGGCTGCTCTTTATTCATGTCTAATGACCTC
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Hines, L., Rolfs, A., Jepson, D., Moreixa, D., Raphael, J., Kelley, F., Shen, B., Halleck, A., Koundinya, M., Hu, Y., Zuo, D., Taycher, E., Williamson, J. and LaBaer, J.

Direct Submission

L. Submitted (05-JAN-2005) Biological Chemistry and Molecular

Direct Submission

L. Submitted (05-JAN-2005) Biological Chemistry and Molecular

Pharmacology, Harvard Institute of Proteomics, 320 Charles St.,
Cambridge, MA 02141, USA

This CDS clone is a part of a collection of human full-length

expression clones generated by Harvard Institute of Proteomics.

This ORF clone has been cloned without stop-codon (to allow fusion

with C-terminal tag). The CDS has been directionally cloned using

BD In-Fusion(TM) cloning system between the Sall and HindIII sites

of the pDNR-Dual vector. Additional sequences in the clone: 'ACC'

after Sall site and before 'ATG' to provide Kozak consensus

sequence, 'GG' after last codon and before HindIII site to maintain

reading frame. Each clone is clonally isolated and full-length

sequence-verified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /translation="MOLRNPELHLGCALALRFLAUSWDIPGARALDNGLARTPTMGW
LHWRRFMCLUDCOREPDSCISEKLFFREMAELMVSEGWKDAGFTEYLCTDDGWAPQPRD
EGRLQADPQRFPHGIRQLANYVHSKGLKLGIYADVGNKTCAGFPGSFGYYDIDAQTFA
DWGWDLLKPCGCYCDSLENLADGYKHWSLALMRTGRBIYYSCEWPLYWWFPCRNYTE
IRQYCNHWRNFADIDDSWKSIKSILDWTSFNQERIYDVAGFGGWNDPDMLVIGNFGLS
WNGOYTQMAANAMARDHSWDLDKISPQCRISPQRYIALADKOYIAINQDPLGKQGYQLRGC
WNFEWWERDSGLAMAYAMINRQEIGGPRSYIALADKOYIAINQDPLGKQGYQLRQCK
KLGFYEWTSRLRSHINPTGTVLLQLENTWQMSLKDLLL
                                                                                                                          Hines, L., Rolfs, A., Jepson, D., Moreira, D., Raphael, J., Kelley, F., Shen, B., Halleck, A., Koundinya, M., Hu, Y., Zuo, D., Taycher, E., Williamson, J. and LaBaer, J.
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/organism="synthetic construct"
/mol_type="mRNA"
/db_xref="texxon:32530"
/clone="FLH025766.01L"
/lab_host="Bscherichia coli DH5alpha T1 resistant"
/note="derived from MGC template"
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Conservative:
Mismatches:
Indels:
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1 (bases 1 to 1290)
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AX892090.1 GI:60652624
Human ORF project.
synthetic construct
synthetic construct
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Synthetic construct Homo sapiens clone FLH025766.01L galactosidase
alpha (GLA) mRNA, partial cds.
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                                                                                                                                                ThrCysAlaGlyPheProGlySerPheGlyTyrTyrAspIleAspAlaGlnThrPheAla
                                                                                                                                                                                                                                       AspTrpGlyValAspLeuLeuLysPheAspGlyCysTyrCysAspSerLeuGluAsnLeu
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Manual Manue, N., Chen, X., Rolfs, A., Halleck, A., Hines, L., Eisenstein, S., Kounding, M., Chen, X., Rolfs, A., Halleck, A., Hines, L., Eisenstein, S., Kounding, M., and Farmer, A.

Direct Submission

M. Submitted (13-MAY-2001) BD Biosciences Clontech, 1020 East Meadow Circle, Palo Alto, CA 94303, USA

This CDS clone is a part of a collection of human full length expression clones generated by BD Biosciences Clontech and the Harvard Institute of Proteomics. Each CDS has been cloned in two forms: with and without stop-codon (to allow fusion with C-terminal tag). The CDS has been directionally cloned using BD In-Fusion(TM) clonis system between the Sall and HindIII sites of the pDNR-DUAL vector. Additional sequences in the clone: 'ACC' after Sall site and before 'ATG' to provide Kozak consensus sequence; 'GG' after last codon and before HindIII site to maintain reading frame.

Clone distribution: http://bioinfo.clontech.com/orfclones.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DWGVDLLKFDGCYCDSLENLADGYKHWSLALNRTGRSIVYSCEWPLYWPPOKPNYTE
IROYCNHWRNFADIDDSWKSIKSILDWTSRNQRRYTVDVAGEGGWNDPDMLVIGNFGLS
WNGOYTQMALWAIMAAPLFRNDLRHIS POAKALLODKDVIAINGDPLGKGGYQLRGG
WNEGWWRRPLGSRAVAMINROBIGGPRSYTIAVASLGKGVACNPACFITGLLPVKR
KLGFYEWTSRLRSHINPTGTVLLQLENTWQMSLKDLLL"
                                                                                                                                                                                                                                                                                                                                  other sequences; artificial sequences.

1 (bases 1 to 1290)
Kalnine,N., Chen,X., Rolfs,A., Halleck,A., Hines,L., Eisenstein,S., Kounding,W., Rapheal,J., Moreira,D., Kelley,T., LaBaer,J., Lin,Y., Chenan,M. and Parmer,A.
Cloning of human full-length CDSs in BD Creator(TM) System Donor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /trānslation="MOLRNPELHLGCALALRPLALVSWDIPGARALDNGLARTPTWGW
LHWBRFMCNLDCQEEPDSCISEKLFWEMAELMVSEGWKDAGYEYLCIDDCWMAPQRDS
EGRLQADPQRPPHGIRQLANYVHSKGLKLGIYADVGNKTCAGPPGSFGYYDIDAQTFA
                                1201 TCAAGGTTAAGAAGTCACATAAATCCCACAGGCACTGTTTTGCTTCAGCTAGAAAATACA 1260
                                                                                                                                                                                            1290 bp mRNA linear SYN 13-MAY-2003
construct Homo sapiens galactosidase, alpha mRNA, partial
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| trans] table=11
|product="Homo sapiens galactosidase, alpha"
|protein id="AAP36607.1"
| db_xref="GI:30584509"
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/note="Vector: pDNR-Dual"
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/mol_type="mRNA"
/db_xref="taxon:32630"
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                                                                                                      AspSerCys1leSerGluLysLeuPheMetGluMetAlaGluLeuMetValSerGluGly
                                                                                                                                                                            TrpLysAspAlaGlyTyrGluTyrLeuCysIleAspAspCysTrpMetAlaProGlnArg
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ò	121 4	laAsnTyrValHisSerLysGlyLeuLysLeuGlyIleTyrAlaAspValGlyAsnLys 140	
qq	361	ICTAATTATGTTCACAGCAAAGGACTGAAGCTAGGGATTTATGCAGATGTTGGAAATAAA 420	
ò	141 1	hrCysAlaGlyPheProGlySerPheGlyTyrTyrAspIleAspAlaGlnThrPheAla 160	
đ	421 7	CCTGCGCAGGCTTCCCTGGGAGTTTTGGATACTACGACATTGATGCCCAGACCTTTGCT 480	
ò	161	spTrpGlyValAspLeuLeuLysPheAspGlyCysTyrCysAspSerLeuGluAsnLeu 180	
ąg G	481	SACTGGGGAGTAGATCTGCTAAAATTTGATGGTTGTTACTGTGACAGTTTGGAAAATTTG 540	
È	181 7	laAspGlyTyrLysHisMetSerLeuAlaLeuAsnArgThrGlyArgSerIleValTyr 200	
qq	541	GENERALGGTIATAAGCACATGTCCTTGGCCCTGAATAGGACTGGCAGAAGCATTGTATAC 600	
ò	201 8	erCysGluTrpProLeuTyrMetTrpProPheGlnLysProAsnTyrThrGluIleArg 220	
qq	601 1	CCTGTGAGTGGCCTCTTTATATGTGGCCCTTTCAAAAGCCCAATTATACAGAAATCCGA 660	
ò	221 0	221 GINTYrCygAgnHigTrpArgAgnPheAlaAspIleAspAspSerTrpLysSerIleLys 240	
Dp ·	661	AGTACTGCAATCACTGGCGAAATTTTGCTGACATTGATGATTCCTGGAAAGTATAAAG 720	
à	241 5	erileLeuAspTrpThrSerPheAsnGlnGluArgIleValAspValAlaGlyProGly 260	
Ωp	721 #		
ò	261 G	llyTrpasnaspProaspMetLeuValIleGlyAsnPheGlyLeuSerTrpasnGlnGln 280	
Ωp	781	GTTGGAATGACCCAGATATGTTAGTGATTGGCAACTTTGGCCTCAGCTGGAATCAGCAA 840	
ò	281 \	alThrGlnMetAlaLeuTrpAlaIleMetAlaAlaProLeuPheWetSerAsnAspLeu 300	
QQ	841	HILLER CONTROLLER CONT	
ò	301 7	rgHisIleSerProGlnAlaLysAlaLeuLeuGlnAspLysAspValIleAlaIleAsn 320	
qq	901	GACACATCAGCCCTCAAGCCAAAGCTCTCCTTCAGGATAAGGACGTAATTGCCATCAAT 960	
ò	321 (
qq	961	raggaccccrrgggcaagcaaggaraccagcrragacaggagagacrrrrgaagrgrgg 1020	
à.	341 (llukrgProLeuSerGlyLeuAlaTrpAlaValAlaMetIleAsnArgGlnGluIleGly 360	
qq	1021	BAACGACCTCTCTCAGGCTTAGCCTGGGGTGTATGATAAACCGGCAGGAGATGGT 1080	
ò	361	llyProArgSerTyrThrIleAlaValAlaSerLeuGlyLysGlyValAlaCysAsnPro 380	
qq	1081	HILLINITITITITITITITITITITITITITITITITITI	
ò	381 4	laCysPheIleThrGlnLeuLeuProValLysArgLysLeuGlyPheTyrGluTrpThr 400	
дg	1141	SCCTGCTTCATCACACACTCCTCCTGTGAAAAGGAAGCTAGGGTTCTATGAATGGACT 1200	
δ	401 8	SerargLeuargSerHis11eAsnProThrGlJyThrValLeuLeuGlnLeuGluasnThr 420	
qq	010	caadgitaagaagitcacataaatcccacaggcactgititgci	
č	421 N	let 42] 	
qq	1261	11 1263	

Search completed: December 26, 2005, 12:40:24 Job time : 5516 secs



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GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.
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- protein search, using sw model OM protein December 24, 2005, 08:58:24; Search time 44 Seconds (without alignments) 791.056 Million cell updates/sec Run on:

US-10-602-219-12
2314
1 MQLRNPELHIGCALALRFLA.....RIRSHINPTGTVLLQLENTM 421 Title: Perfect score: Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

572060 segs, 82675679 residues Searched:

572060 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Issued_Patents_AA:* Database :

1: /cgr2_6/ptodata/1/iaa/5_COMB.pep:*
2: /cgn2_6/ptodata/1/iaa/6_COMB.pep:*
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4: /cgn2_6/ptodata/1/iaa/PcTUS_COMB.pep:*
5: /cgn2_6/ptodata/1/iaa/RB_COMB.pep:*
6: /cgn2_6/ptodata/1/iaa/RB_COMB.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

Description	Sequence 12, Appl	12,	14,	14,	2,	e,	7	Sequence 3, Appli	7,	6	10,	• •	, ,	ý	Seguence 4, Appli	œ	ω̈	4	Sequence 4, Appli		Seguence 16, Appl	16,	Sequence 18, Appl	18,	22,		20,
SUMMARIES	US-09-993-059-12	US-10-103-327-12		US-10-103-327-14	US-07-602-824A-2	•	07-983-	-08-261-	US-08-261-577-7	US-08-261-577-9	US-09-993-059-10	US-10-103-327-10	US-09-993-059-6	US-10-103-327-6	US-09-070-356-4	US-09-993-059-8	US-10-103-327-8	US-09-993-059-4	US-10-103-327-4	5179023-4	US-09-993-059-16	US-10-103-327-16	US-09-993-059-18	US-10-103-327-18	US-09-993-059-22	US-10-103-327-22	US-09-993-059-20
ength DB		•	•	427 2	429 1	429 1	429 1	429 1	429 1	429 1	431 2	431 2	435 2	435 2	429 2		424 2						423 2		409 2		401 2
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Score	2314	2314	2314	2314	2314	2314	2314	2314	2314	2314	2314	2314	2314	2314	2310	2309	2309	2309	2309	2296	2293	2293	2293	2293	2226		2213
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361 GPRSYTIAVASLGKGVACNPACFITQLLPVKRKLGFYEWTSRLRSHINPTGTVLLQLENT 420

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Sequence 20, Appli Sequence 7, Appli Sequence 6, Appli Sequence 3, Appli Sequence 2, Appli Sequence 26, Appli Sequence 1, Appli Sequence 4, Appli Sequence 26, Appli Sequence 26, Appli Sequence 26, Appli Sequence 26, Appli Sequence 8, Appli Sequence 9, Appli Sequence 9, Appli Sequence 9, Appli Sequence 9, Appli Sequence 9, Appli	Sequence 12, Appl
US-10-103-327-20 US-09-176-666-6 US-09-176-666-5 US-09-176-666-3 US-09-176-666-3 US-09-176-666-3 US-09-176-666-3 US-09-176-666-1 US-09-176-66-1 US-09-176-66-1 US-09-176-66-1 US-09-176-66-1 US-09-176-66-8 US-09-176-66-8 US-09-176-66-8 US-09-176-66-8 US-09-176-66-8 US-09-176-66-8 US-09-176-66-8 US-09-176-66-8 US-09-176-66-8 US-09-176-66-8 US-09-176-66-8	US-09-176-666-12
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ALIGNMENTS

	0	09	120	180	240	300
	Gaps	DCQEEP DCQEEP	HGIRQL HGIRQL	ANYVHSKGLKLGIYADVGNKTCAGFPGSFGYYDIDAQFFADMGVDLLKFDGCYCDSLENL 	SWKSIK SWKSIK	FMSNDL
	421; 0;	RFMCNL 	DPORFP 	FDGCYC 	FADIDD 	IMAAPL IMAAPL
N	Length 421; Indels 0	MQLRNPELHLGCALALRFLALVSWDIPGARALDNGLARTPTWGWLHWERFWCNLDCQEEP 	DSCISEKLFMEMAELMVSEGWKDAGYEYLCIDDCWMAPQRDSEGRLQADPQRFPHGIRQL 	ANYUHSKGLKLGIYADVGNKTCAGFPGSFGYYDIDAQFFADWGVDLLKFDGCYCDSLENL 	ADGYKHMSLALNRTGRSIVYSCEWPLYMWPFQKPNYTBIRQYCNHWRNFADIDDSWKSIK 	SILDWISFNOERIVDVAGPGGWNDPDWLVIGNFGLSWNOOVTOWALWAIMAAFLFWSNDL
	. 4 .	ARTPIN ARTPIN	APORDS APORDS	OTFADW OTFADW	TEIROY TEIROY	WNOOVT
AL ENZ EXPRES	4; DB 2 1.4e-23 hes 0	ALDNGL ALDNGL	IDDCWM	YYDIDA YYDIDA	FOKPNY FOKPNY	GNFGLS GNFGLS
3059 OF LYSOSOMAL ENZYMES TRANSIENT EXPRESSION 09/993,059 3	Score 2314; Pred. No. 1. Mismatches	DIPGAR	GYEYLC GYEYLC	PPGSFG	12 LYMWE 12 LYMWE	PDMLVI PDMLVI
305 OF 1782 3 3 6 c s	, Sc , Pr , 0,	LALVSW 	EGWKDA EGWKDA	NKTCAG	VYSCEW	PGGWND
12. Application US/0993059 688768 688768 688768 G8RAATION: T: GARGER, Stephen A. T: TURPEN, Thomas H. T: KUMAGAI, Monto H. INVENTION: PLANTS BY TRANSI ERRNCE: 008010087CPUSOS APPLICATION NUMBER: US/09/993 FILING DATE: 2001-11-13 FILING DATE: 2001-11-13 FILING DATE: 201-11-13	100.0% 100.0% ive	ALALRE	ABELMVS ABELMVS	SIYADVG 	RTGRS1 RTGRS1	RIVDVAG RIVDVAG
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1059-12 10. Application (6887696 10. INFORMATION: 13. ANT: GARGER, Stevant: 13. ANT: TURPEN, TYANT: 13. ANT: KUMAGAI, NOF INVENTION: PROPERIENCE: OPPINGATION: PROPERIENCE: OPPINGATION: PROPERING DATE: TO FEGUL DATE: TO FEGUL DATE: TO FEGUL DATE: TO FEGUL DAS: TO FEGUL DATE: T	Έ	MOLRN 				
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RESULT 4
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1 MQLRNPELHLGCALALRFLALVSWDIPGARALDNGLARTPTMGWLHWERFMCNLDCQEEP
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                                                                                                                             Sequence 12, Application US/10103327

Patent No. 6890748

GENERAL INFORMATION:
APPLICANT: TUREOR, Stephen A.
APPLICANT: TUREOR INVENION: PRODUCTION OF LYSOSOMAL ENZYMES IN
TITLE OF INVENITON: PRODUCTION OF LYSOSOMAL ENZYMES IN
TITLE OF INVENITON: PRODUCTION OF LYSOSOMAL ENZYMES IN
FILE REFERENCE: 008010087CPUS06
CURRENT PEPLING DATE: 2002-03-20
PRIOR FILING DATE: 2002-03-20
PRIOR FILING DATE: 2001-11-13
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100.0%; Pred. No. 1.4e-234;
tive 0; Mismatches 0;
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SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 12
LENGTH: 421
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Patent No. 6887696
GENERAL INFORMATION:
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Best Local Similarity 100.0
Matches 421; Conservative
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CORGANISM: Homo sapiens
US-10-103-327-12
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US-10-103-327-12
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Patent No. 689748

GENERAL INFORMATION:
APPLICANT: TURPEN, Stephen A.
APPLICANT: TURPEN, Thomas H.
TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN
FILE REPRENCE: 0080100877CUNGO6
CURRENT APPLICATION NUMBER: US/09/993,059

PRIOR APPLICATION NUMBER: US/09/993,059

PRIOR PRILING DATE: 2001-11-13
NUMBER OF SEQ ID NOS: 37

SOFTWARE: PASESEQ for Windows Version 4.0

SEQ ID NO 14
APPLICANT: GARGER, Stephen A.
APPLICANT: TURBEN, Thomas H.
APPLICANT: TURBEN, THOMAS H.
APPLICANT: TURBEN, THOMAS H.
TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN
TITLE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION
FILE REFERENCE: 008010087CPUGGO
CURRENT APPLICATION NUMBER: US/09/993,059
CURRENT FILING DATE: 2001-11-13
NUMBER OF SEQ ID NOS: 37
SOFTWARE: FASTSEQ for Windows Version 4.0
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100.0%; Pred. No. 1.5e-234;
iive 0; Mismatches 0;
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Best Local Similarity 100.
Matches 421; Conservative
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ZIP: 10036
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/602,608
TELEFAX: (212) 869-8864/9741
TELEX: 66141 PENNIE
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
LENGTH: 429 amino acids
TYPE: amino acid
TOPOLOGY: linear
                                                                                                                                     , MOLECULE TYPE: protein US-07-602-824A-2
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                                                                                                                                                                                                                                                                                                ANYVHSKGLKLGIYADVGNKTCAGFPGSFGYYDIDAQFFADWGVDLLKFDGCYCDSLENL 180
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                                                                                                                                           1 MOLRNPELHLGCALALRFLALVSWDIPGARALDNGLARTPTMGWLHWERFMCNLDCQEEP 60
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GENERAL INFORMATION:
APPLICANT: Desnick, Robert J.
APPLICANT: Bishop, David F.
APPLICANT: Islahop, David F.
APPLICANT: Islahop, David F.
APPLICANT: Islahop, David F.
APPLICANT: Islahop, Title A.
TITLE OF INVENTION: CLONING AND EXPRESSION OF BIOLOGICALLY
TITLE OF INVENTION: ACTIVE alpha-GALACTOSIDASE A
NUMBER OF SEQUENCES: 13
CORRESPONDENCE ADDRESS:
ADDRESSEE: PENNIE & EDMONDS
STREET: 1155.Avenue of the Americas
CITY: New York
COMPUTRY: U.S.A.
ILP: 10036
COMPUTRY: U.S.A.
ILP: 10036
COMPUTRY: IBM FC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARB: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/602,824A
FILING DATE: 24-OCT-1990
CLASSIFICATION NUMBER: US/07/602,824A
FREFERENCE/DOCKET NUMBER: 0593-005
TELECOMMUNICATION INDERMATION:
TELEPHONE: (212) 790-9090
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                                                              Query Match 100.0%; Score 2314; DB 2; Length 427; Best Local Similarity 100.0%; Pred. No. 1.5e-234; Matches 421; Conservative 0; Mismatches 0; Indels 0
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        ; ORGANISM: Homo sapiens
US-10-103-327-14
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                                                                                                    1 MOLENPELHLGCALALRFLALVSWDIPGARALDNGLARTPTMGWLHWERFMCNLDCQEEP
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                                                      Gaps
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Patent No. 5382524

GENERAL INFORMATION:
APPLICANT: Desnick, Robert J.
APPLICANT: Bishop, David F.
APPLICANT: Bishop, Anne M.
TITLE OF INVENTION: CLONING AND EXPRESSION OF BIOLOGICALLY
TITLE OF INVENTION: ACTIVE ALPHA-N-ACETYLGALACTOSAMINIDASE
NUMBER OF SEQUENCES: 24
CORRESPONDENCES: 24
CORRESPONDENCE ADDRESS:
ADDRESSE: PENNIE & EDMONDS
STREET: 1155 Avenue of the Americas
                                                   ö
  Length 429;
                                                   Indels
Query Match 100.0%; Score 2314; DB 1;
Best Local Similarity 100.0%; Pred. No. 1.5e-234;
Matches 421; Conservative 0; Mismatches 0;
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61 DSCISEKLFMEMAELMVSEGWKDAGYEYLCIDDCWMAPQRDSEGRLQADPQRFFHGIRQL 120
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; Sequence 3, Application US/08261578
; Patent No. 5491075
; GENERAL INFORMATION:
; APPLICANT: Bishop, David F.
; APPLICANT: Ioannou, Yiannis A.
; APPLICANT: Hang, Anne M.
; APPLICANT: Wang, Anne M.
; TITLE OF INVENTION: CLONING AND EXPRESSION OF BIOLOGICALLY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                       COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
MEDIUM TYPE: Floppy disk
COMPUTER: Floppy disk
COMPUTER: Floppy disk
COMPUTER: Floppy disk
COPERATIOR SYSTEM: FC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/983,451
FILING DATE: 30-NOV-1992
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: COLUZZI, LAULER A.
REGISTRATION NUMBER: 6923-030
TELEFRACIONICATION INFORMATION:
TELEFONNE: 212-690-8864/9741
TELEFAX: 212-869-8864/9741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 100.0%; Score 2314; DB 1; Best Local Similarity 100.0%; Pred. No. 1.5e-234; Matches 421; Conservative 0; Mismatches 0;
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; Sequence 2, Application US/07983451
; Sequence 2, Application US/07983451
; Refert No. 5401660:
; Barbar Sequence:
; APPLICANT: Bishop, David F.;
; APPLICANT: Bishop, David F.;
; TITLE OF INVENTION: Cloning and Expression of Biologically;
; TITLE OF INVENTION: Active alpha-Galactosidase A.
; NUMBER OF SEQUENCES: 13
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: PENNIE & EDMONDS
; STREET: 1155 Avenue of the Americas
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 429;
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Pred. No. 1.5e-234;
0; Mismatches 0; Indels
                                                                                                                                               6923-008
FILING DATE: 24-OCT-1990
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Coruzzi, Laura A.
REGISTRATION NUMBER: 30,742
REFERENCE/DOCKET NUMBER: 6923-0
TELEPAN: (212) 790-9090
TELEPAN: (212) 790-9090
TELEPAN: (212) 869-8864/9741
TELEPAN: (212) 869-8864/9741
TELEPAN: (212) 790-9090
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Best Local Similarity 100.0%;
Matches 421; Conservative 0;
                                                                                                                                                                                                                                                                                                                                                                                                                              TOPOLOGY: unknown MOLECULE TYPE: protein
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ACTIVE ALPHA-N-ACETYLGALACTOSAMINIDASE

TITLE OF INVENTION:

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                                                                                                                                                                                                             SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/261,578
FILING DATE: 17-JUN-1994
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/602,608
FILING DATE: 24-OCT-1990
ATTORNEY/AGENT INFORMATION:
NAME: COTTAZI, Laura A.
                                                  STREET: 1155 Avenue of the Americas CITY: New York STATE: New York COUNTRY: U.S.A.
                                                                                                                        ZIP: 10036
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (212) 869-8864/9741
NUMBER OF SEQUENCES: 24
CORRESPONDENCE ADDRESS:
ADDRESSEE: PENNIE & EDMONDS
                                                                                                                                                                                                                                                                                                                                                                                 NAME: Coruzzi, Laura A.
REGISTRATION NUMBER: 30,742
REFERENCE/DOCKET NUMBER: 69
                                                                                                                                                                                                                                                                                                                                                                                                                                      TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 790-9090
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INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
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TYPE: amino acid
STRANDEDNESS: single
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Best Local Similarity
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                                                                      APPLICANT: Desnick, Robert J.
APPLICANT: Bishop, David F.
APPLICANT: Dannou, Yiannis F.
APPLICANT: Ioannou, Yiannis TITLE OF INVENTION: Cloning and Expression of Biologically TITLE OF INVENTION: Active alpha-Galactosidase A NUMBER OF SEQUENCES: 12
CORRESPONDENCE ADDRESS:
ADDRESSEE: Pennie & Edmonds
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100.0%; Pred. No. 1.5e-234;
tive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/261,577
FILING DATE: 17-JUN-1994
CLASSIPICATION: 435
                                                                                                                                                                                                                                           ADDRESSEB: Pennie & Edmonds
STREET: 1155 Avenue of the Americas
CITY: New York
                                                                                                                                                                                                                                                                                                                                                                                                                           MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
; Sequence 7, Application US/08261577; Patent No. 5580757; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTORNEY/AGENT INFORMATION:
NAME: Coruzzi, Laura A.
REGISTRATION NUMBER: 30,742
REFERENCE/DOCKET NUMBER: 692
TELECOMMUNICATION INFORMATION:
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TELEFAX: (212) 869-8864
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COMPUTER READABLE FORM:
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GPRSYTIAVASIGKGVACNPACFITQLLPVKRKLGFYEWTSRLRSHINPTGTVLLQLENT 420
RHISPQAKALLODKDVIAINODPLGKOGYQLROGDNFEVWERPLSGLAWAVAMINROBIG 360
                                                                                                                                     61 DSCISEKLFMEMAELMVSEGWKDAGYEYLCIDDCWMAPQRDSEGRLQADPQRFPHGIRQL 120
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                                                                                                                    GPRSYTIAVASLGKGVACNPACFITQLLPVKRKLGFYEWTSRLRSHINPTGTVLLQLENT
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                                                                                                                                                                                                                                                                                            Sequence 10, Application US/09993059;
Patent No. 6887696;
GENERAL INFORMATION:
APPLICANT: GARGER, Stephen A.;
APPLICANT: TUREN, Thomas H.
APPLICANT: KUMAGAI, Monto H.
TILLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN TILLE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION; FILE REFERENCE: 008010087CPUS06; CURRENT APPLICATION NUMBER: US/09/993,059; CURRENT APPLICATION NUMBER: 2001-11-13; NUMBER OF SEQ ID NOS: 37; SOFTWARE: FastSEQ for Windows Version 4.0
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Mismatches 0;
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100.0%; Pred. No. 1.5
iive 0; Mismatches
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Matches 421; Conservative
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US-09-993-059-10
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                                                                                                                                                                                                                GENERAL INFORMATION:
APPLICANT: Desnick, Robert J.
APPLICANT: Bishop, David F.
APPLICANT: Bishop, David F.
APPLICANT: Bishop, David F.
APPLICANT: Bishop, Stannis A.
TITLE OF INVENTION: Cloning and Expression of Biologically
TITLE OF INVENTION: Active alpha-Galactosidase A
NUMBER OF SEQUENCES: 12
CORRESPONDENCE ADDRESS:
ADDRESSEE: Pennie & Edmonds
STREET: ILS Avenue of the Americas
CITY: New York
STATE: New York
COUNTRY: USA
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MEDIUM TYPE: Floppy disk

COMPUTER: IBM PC compatible

COMPOTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOCTAME: Patentin Release #1.0, Version #1.25

CURRENT APPLICATION DATE:

APPLICATION NUMBER: US/08/261,577

FILING DATE: 17-JUN-1994

CLASSIFICATION: 435

ATTORNEY/AGENT INFORMATION:

NAME: COTALSI, LAURA A.

REGISTRATION NUMBER: 6923-042

REFERENCE/DOCKET NUMBER: 6923-042

TELECOMMUNICATION INFORMATION:

TELEFRAX: (212) 790-9090

TELEFRAX: (212) 790-9090

TELEF 6614 PENNIS

INFORMATION FOR SEQ ID NO: 9: SEQUENCE CHARACTERISTICS:

"FMATH: 429 amino acids
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Pred. No. 1.5e-234;
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Patent No. 5580757
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Best Local Similarity 100.
Matches 421; Conservative
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CURRENT FILING DATE: 2001-11-13
NUMBER OF SEQ ID NOS: 37
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 6
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SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 6
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Best Local Similarity 100.
Matches 421; Conservative
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CORGANISM: Homo sapiens
US-10-103-327-6
                                                                     ; LENGTH: 435
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-993-059-6
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Best Local Similarity
Matches 421; Conserv
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                                              Sequence 10, Application US/10103327

Patent No. 6890748

GENERAL INPORMATION:
APPLICANT: GARGER, Stephen A.
APPLICANT: TURPEN, Thomas H.
APPLICANT: KUMAGAI, Monto H.
TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN
TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN
TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN
FILE REFERENCE: 008010087CPUSO6
CURRENT FILING DATE: 2002-03-20
PRIOR FILING DATE: 2002-03-20
PRIOR FILING DATE: 2001-11-13
NUMBER OF SEQ ID NOS: 37
SOFTWARE: FastSEQ for Windows Version 4.0
SECTION OF SEQ ID NOS: 37
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US-09-993-059-6
i Sequence 6, Application US/09993059
Patent No. 6887696
GENERAL INFORMATION:
APPLICANT: GARGER, Klephen A.
APPLICANT: KUMAGAI, Monto H.
TITLE OF INVENTION: PRODUCTION OF LYSOSOWAL ENZYMES IN
TITLE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION
FILE REFERENCE: 008010087CPUS06
CURRENT APPLICATION NUMBER: US/09/993,059
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100.0%; Pred. No. 1.5e-234;
tive 0; Mismatches 0;
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ORGANISM: Homo sapiens
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US-10-103-327-6

Sequence 6, Application US/10103327

Patent No. 6890748

GENERAL INFORMATION:
APPLICANT: GARGER, Stephen A.
TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN FILE REFERENCE: 008010087CPUS06

CURRENT APPLICATION NUMBER: US/10/103,327

CURRENT FILING DATE: 2002-03-20

PRIOR PILING DATE: 2001-11-13
100.0%; Score 2314; DB 2;
100.0%; Pred. No. 1.5e-234;
iive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100.0%; Score 2314; DB 2; ilarity 100.0%; Pred. No. 1.5e-234; Conservative 0; Mismatches 0;
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ADGYKHMSLALNRIGRSIVYSCEWPLYMWPFQKPNYTEIRQYCNHWRNFADIDDSWKSIK 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61 DSCISEKLFMEMAELMVSEGWKDAGYEYLCIDDCWMAPQRDSEGRLQADPQRFPHGIRQL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241 SILDWISFNOERIVDVACPGGWNDPDMLVIGNFGLSWNOOVTOMALWAIMAAPLFMSNDL 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 MOLRNPELHLGCALALRFLALVSWDIPGARALDNGLARTPTWGWLHWERFWCNLDCQEEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241 SILDWISFRYGERIVDVAGPGGRNDPDMLIVGNFGLSWNQQVTQMALWAIMAAPLFMSNDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61 DSCISEKLFWEMAELMVSEGWKDAGYEYLCIDDCWMAPQRDSEGRLQADPQRFPHGIRQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ANYVHSKGLKLGI YADVGNKTCAGFPGSFGYYDI DAQTFADWGVDLLKFDGCYCDSLENL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 MOLRNPELHLGCALALRFLALVSWDIPGARALDNGLARTPTMGWLHWERFMCNLDCQEEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE: Fabry Disease: Isolation of a cDNA TITLE: Clone Encoding Human a-Galactosidase A JOURNAL: Proceedings of the National Academy VOLUME: 82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 2310; DB 2;
Pred. No. 3.9e-234;
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99.0%; Pred. No. 5...
4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME/KEY: human a-galactosidase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PUBLICATION DATE:
RELEVANT RESIDUES IN SEQ ID NO:
                                                                                                               to mRNA
                                                                                                                                                                                                                                                                                                                                                                                    library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IDENTIFICATION METHOD:
OTHER INFORMATION:
PUBLICATION INFORMATION:
AUTHORS: Calhoun et al
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity 99.0
Matches 417; Conservative
SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                              ORGANELLE:
IMMEDIATE SOURCE: lib.
POSITION IN GENOME: un
CHROMOSOME/SEGMENT:
MAP_POSITION:
                                                                                                                                                                                                                                                 INDIVIDUAL ISOLATE:
DEVELOPMENTAL STAGE
                                 TYPE: amino acid
STRANDEDNESS: doud
TOPOLOGY: linear
MOLECULE TYPE:
DESCRIPTION: CDNA
HYPOTHETICAL: no
                                                                                                               CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             82
7364-7368
                                                                                                                                                 ANTI-SENSE: yes
FRAGMENT TYPE:
ORIGINAL SOURCE:
ORGANISM: human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DOCUMENT NUMBER:
                                                                                                                                                                                                                                                                                                      TISSUB TYPE:
CELL TYPE:
CELL LINE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FILING DATE:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCATION
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                                                                                                                                                                                                                               STRAIN:
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                                                                                                                                                                                                                               181 ADGYKHMSLALNRTGRSIVYSCEWPLYMWPFQKPNYTEIRQYCNHWRNFADIDDSWKSIK 240
                                                                                                                                                                                                                                                                                                          241 SILDWTSFNQERIVDVAGPGGWNDPDMLVIGNFGLSWNQQVTQMALWAIMAAPLFMSNDL 300
                                                                                                                                                                                                                                                                                                                                                                                      301 RHISPQAKALLQDKDVIAINQDPLGKQGYQLRQGDNFEVWERPLSGLAWAVAMINRQEIG 360
                                                                                                                                                                                                                                                                                                                                                                                                          361 GPRSYTIAVASLGKGVACNPACFITQLLPVKRKLGFYEWTSRLRSHINPTGTVLLQLENT 420
                                   9
                                                                                                                                                                                                                                                     181 ADGYKHMSLALNRTGRSIVYSCEWPLYMWPPQKPNYTEIRQYCHHWRNPADIDDSWKSIK
                                                                                                                                                                                                                                                                                                                                241 SILDWISFNOERIVDVAGPGGWNDPDMLVIGNFGLSWNQQVIQWALWAIMAAPLFMSNDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  361 GPRSYTIAVASLGKGVACNPACFITQLLPVRRKLGFYEWTSRLRSHINPTGTVLLQLENT
                     1 MQLRNPELHLGCALALRFLALVSWDIPGARALDNGLARTPTWGWLHWERFWCNLDCQEEP
                                                                                                                                                     121 ANYVHSKGLKLGIYADVGNKTCAGFPGSFGYYDIDAQTFADWGVDLLKFDGCYCDSLENL
 MQLRNPELHLGCALALRFLALVSWDIPGARALDNGLARTPTMGWLHWERFMCNLDCQEEP
                                                                           DSCISEKLFMEMAELMVSEGWKDAGYEYLCIDDCWMAPQRDSEGRLQADPQRFPHGIRQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER: 3.5 inch 1.44 Mb storage diskette COMPUTER: IBM PC Compatible OPERATING SYSTEM: MS-DOS SOFTWARE: Word Processor (ASCII)
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/070,356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
APPLICANT: Alex Zhu
APPLICANT: Jack Goldstein
TITLE OF INVENTION: Recombinant a-N-
TITLE OF INVENTION: Recyt/galactosaminidase
TITLE OF INVENTION: Brizme and cDNA Encoding
TITLE OF INVENTION: Said Enzyme
NUMBER OF SEQUENCES: 7
CORRESSONDENCE ADDRESS:
ADDRESSEE: Amster, Rothstein & Ebenstein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE: Amster, Rothstein & Ebenstein STREET: 90 Park Avenue CITY: New York STATE: New York COUNTRY: U.S.A. ETE: 10016 COMPUTER READABLE FORM: MEDIUM TYPE: 3.5 inch 1.44 Mb storage dis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CLASSIFICATION:
PRIOR APPLICATION DATA:
PRIOR APPLICATION DATA:
PREPLICATION NUMBER: 08/037,248
FILING DATE: MATCH 26, 1993
ATTORNEY AGENT INFORMATION:
NAME: PSEQUALINI, Patricia A.
REGISTRATION NUMBER: 43,894
REFERENCE/DOCKET NUMBER: 63475/12
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 697-5995
TELEPHONE: (212) 697-5995
TELEPHONE: (212) 286-0854 or 286-0082
TELEREX: TWX 710-581-4766
INFORMATION FOR SEQ ID NO: 4:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 4, Application US/09070356 Patent No. 6228631
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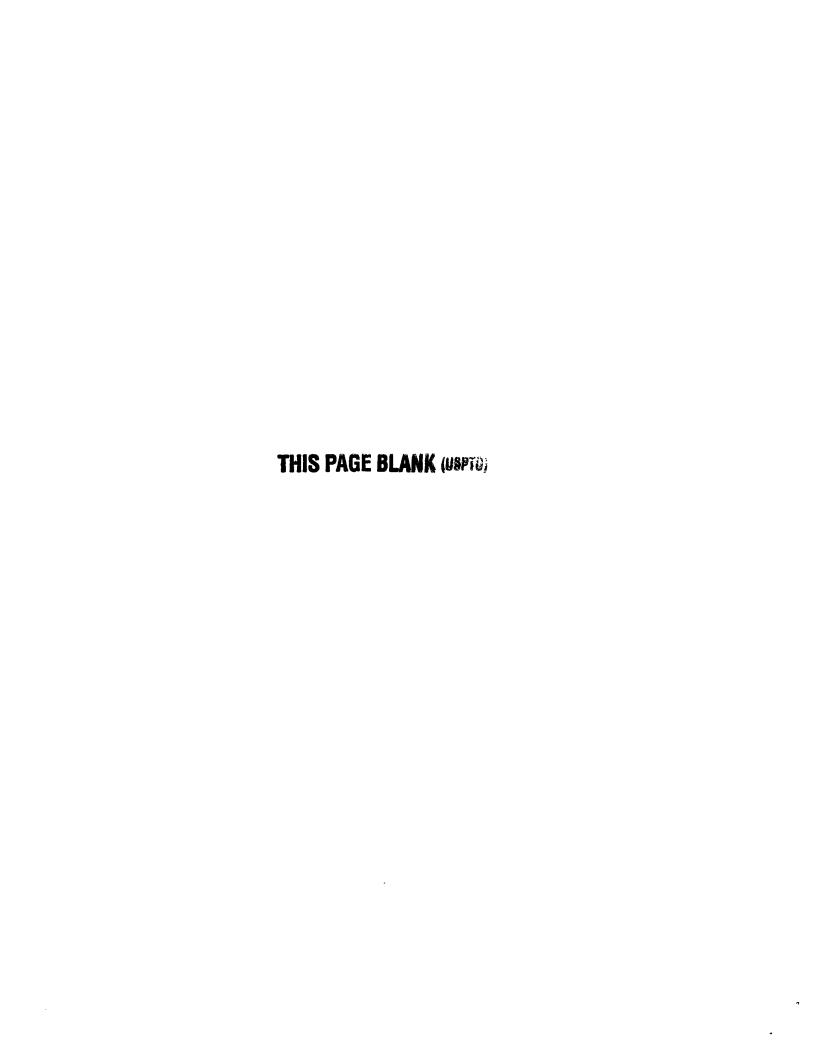
120

60

Gaps ; 0

Length 429; 0; Indels

Search completed: December 24, 2005, 09:12:00 Job time : 45 secs



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5.1.6
Compugen Ltd.
GenCore version (c) 1993 - 2005
          Copyright
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sw model - protein search, using OM protein Run on:

December 24, 2005, 09:07:49; Search time 40 Seconds (without alignments) 1012.681 Million cell updates/sec

US-10-602-219-12 Title: Perfect score: Sequence:

1 MQLRNPELHLGCALALRFLA......RLRSHINPTGTVLLQLENTM 421

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

283416 seqs, 96216763 residues Searched:

283416 Total number of hits satisfying chosen parameters:

seq length: 0 seq length: 200000000 88 Minimum | Maximum |

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 su

summaries

PIR 80:*
1: pir1:*
2: pir2:*
3: pir3:* Database

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

		æ			SUMMARIES	
Result No.	Score	Query Match	Length	DB	ID	Description
	2314	100.0	429	-	GBHUA	alpha-galactosidas
7	1811	78.3	419	~	JC4522	alpha-galactosidas
m	1051	45.4	405	7	845522	alpha-N-acetylgala
4	952.5	41.2	411	7	A35485	alpha-N-acetylgala
Ŋ	930	40.2	358	~	A33265	alpha-N-acetylgala
9	862	37.3	451	7	T24018	hypothetical prote
7	716.5	31.0	434	~	T47748	alpha-galactosidas
œ	712	30.8	378	~	T50781	alpha-galactosidas
σ	687.5	29.7	422	~	T06388	alpha-galactosidas
10	682	29.5	425	~	T10860	alpha-galactosidas
11	681.5	29.5	411	~	S07472	alpha-galactosidas
12	929	29.5	680	N	T36472	
13	609	26.3	436	N	T39118	probable alpha-gal
14	598	25.8	396	N	JC5558	alpha-galactosidas
. 15	557	24.1	469	N	S45453	alpha-galactosidas
16	543.5	23.5	545	N	S23582	alpha-galactosidas
17	521	22.5	471	N	850312	alpha-galactosidas
18	519	22.4	471	~	850311	alpha-galactosidas
19	216	22.3	444	~	S74221	alpha-galactosidas
20	514	22.2	471	7	JQ1021	alpha-galactosidas
21	510	22.0	471	~	850310	alpha-galactosidas
22	502	21.7	471	-	GBBYAG	alpha-galactosidas
23	300.5	13.0	204	7	T04423	probable alpha-gal
24	282.5	•	432	7	F83883	hypothetical prote
25	198	8.6	159	~	T04422	alpha-galactosidas
26	180.5	7.8	624	N	S74222	alpha-galactosidas
27	129	•	641	N	A55549	glucan 1,6-alpha-i
28	125	5.4	348	~	A70311	hypothetical prote
29	116	5.0	4199	~	S76412	

alpha-amylase (EC alpha-galactosidas	hypothetical prote hypothetical prote Subtilase family p	alpha-amylase (imp hypothetical prote	alpha-galactosidas cellulase - Cellul	transglycosylase, alpha-amylase (EC	alpha-amylase (EC N-acetylgalactosam	ATP synthase subun	hypothetical prote
S14957 S44254	D90496 T35882 AT2007	C86781 T36462	A43717 S49541	E87414 S14956	T02956 KJHUAB	H90202	T19442
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30	3 8 8 8 8 8	32	37 38	39	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	64.	45

ALIGNMENTS

RESULT 1 GBHUA alpha-galactosidase (BC 3.2.1.22) A precursor - human N;Atternate names: alpha-D-galactoside galactohydrolase; melibiase
Cidate: 30-Jun-1987 #sequence revision 27-Oct-1995 #text change 09-Jul-2004 CiAccession: S04081; A29608; A30214; S14879; A00896; B00896; I37140 R:Kornreich, R.; Desnick, R.J.; Bishop, D.F.
Nucleic Acids Res. 17, 3301-3302, 1989 A; Title: Nucleotide sequence of the human alpha-galactosidase A gene. A; Reference number: S04081; MUID:89263745; PMID:2542896

A,Accession: \$14081 A,Status: translation not shown A,Status: translation not shown A,Residues: 1-429 <ROR> A,Cross-references: UNIPARC:UPI0000033A30; EMBL:X14448; NID:g31755; PIDN A,Cross-references: UNIPAROT:PG280; UNIPARC:UPI0000033A30; EMBL:X14448; NID:g31755; PIDN B,Ouinn, M.; Hantzopoulos, P.; Fidanza, V.; Calhoun, D.H. Gene 58, 177-188, 1987 A,Title: A genomic clone containing the promoter for the gene encoding the human lysosom A,Reference number: A29608; MUID:88112869; PMID:2892762

A;Molecule type: DNA A;Residues 1.64 - 2011-A;Cross-references: UNIPARC:UPI000016A96A; GB:M18242; NID:g182944; PIDN:AAA52514.1; PID R;Bishop, D.F.; Kornreich, R.; Desnick, R.J. Proc. Netl. Acad. Sci. U.S.A. 88, 3903-3907, 1988 A;Title: Structural organization of the human alpha-galactosidase A gene: further eviden A;Reference number: A30214; MUID:88234528; PMID:2836863

A; Accession: A30214

A; Molecule type: DNA
A; Residues: 1-64 < eBLS.
A; Residues: 1-64 < eBLS.
A; Residues: 1-64 < eBLS.
A; Cross-references: UNIPARC:UPI000016A96A; EMBL:M20317; EMBL:J03249
B; Cross-references: UNIPARC:UPI000016A96A; EMBL:M20317; EMBL:J03249
B; R; Koide, T.; Inhiura, M.; Iwai, K.; Inoue, M.; Kaneda, Y.; Okada, Y.; Uchida, T.
FEBS Lett. 259, 353-356, 1990
A; Title: A case of Fabry's disease in a patient with no alpha-galactosidase A activity a.
A; Residuent S14879
A; MOLECULE type: MRNA
A; Residues: 1, K.; 3-39, K.; 41-429 < KOI>
A; Molecule type: MRNA
A; Residues: 1, K.; 3-39, K.; 41-429 < KOI>
A; Residues: 1, K.; 3-39, K.; 41-429 < KOI>
A; Experimental source: Fabry's disease patient
A; Experimental source: Fabry's disease patient
B; Bishop, D.F.; Calhoun, D.H.; Bernstein, H.S.; Hantzopoulos, P.; Quinn, M.; Desnick, R.
B; Bishop, D.F.; Calhoun, D.H.; Bernstein, H.S.; Hantzopoulos, P.; Quinn, M.; Desnick, R.
A; Title: Human alpha-galactosidase A: nucleotide sequence of a cDNA clone encoding the base and the number: A00896; MUID:86259694; PMID:3014515

A,Molecule type: mRNA *Residues: 27-429 <BL2. A;Crose-references: UNIPARC:UPI000000358; GB:M13571; NID:g178245; PIDN:AAA51676.1; PID A;Experimental source: lung

A, Accession: B00896 A, Molecule type: protein

PIDN

GB:U34071; NID:g1141787;

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A; Cross-references: UNIPARC:UPI00001729C6; UNIPARC:UPI00001729C7; UNIPARC:UPI00001729C8; R; Tsul', S., Martin, B.M.; Kaslow, D.C.; Migeon, B.R.; Choudary, P.V.; Stubblefiled, B.R. Eur. J. Blochem. 165, 275-280, 1987
A; Title: Signal sequence and DNA-mediated expression of human lysosomal alpha-galactosid A; Recence number: 137140; MUID:87246603; PMID:3036D6
A; Residues: 1-429 e.RES
A; Cross-references: UNIPARC:UPI0000033A30; EMBL:X05790; NID:g28535; PIDN:CAA29232.1; PIL
A; Cross-references: UNIPARC:UPI000033A30; EMBL:X05790; NID:g28535; PIDN:CAA29232.1; PIL
A; Cross-references: GDB:119272; OMIM:301500
A; Map position: KG21.3-KG22
A; Introns: 65/2; 123/3; 183/1; 213/3; 267/3; 333/3
C; Superfamily: alpha-galactosidase
C; Keywords: Fabry disease; Glycolipid metabolism; glycoprotein; glycosidase; hydrolase; F; 1-31/Domain: signal sequence #status predicted <RIC
F; 1-31/Domain: signal sequence #status predicted <AMI>F; 139,192,215,408/Binding site: carbohydrate (Asn) (covalent) #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            alpha-galactd
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Tabha-galactosidase (EC 3.2.1.22) A precursor - mouse
N.Alternate names: alpha-D-galactoside galactohydrolase
C;Species: Mus musculus (house mouse)
C;Species: Mus musculus (house mouse)
C;Species: Mus musculus (house mouse)
C;Accession: JC4522
R;Ohshima, T.; Murray, G.J.; Nagle, J.W.; Quirk, J.M.; Kraus, M.H.; Barton, N.W.; Brady, A.Title: Structural Joyganization and expression of the mouse gene encoding alpha-galactor A;Reference number: JC4522; MUID:96125203; PMID:8543175
A;Accession: JC4522
A;Molecule type: mRNA
A;Residues: 1-419 <OHS>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RHISPOAKALLODKDVIAINODPLGKOGYOLROGDNFEVWERPLSGLAWAVAMINROEIG 360
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADGYKHMSLALNRTGRSIVYSCEWPLYWWPFQKPNYTEIRQYCNHWRNFADIDDSWKSIK
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100.0%; Pred. No. 1.7e-190;
ive 0; Mismatches 0;
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Best Local Similarity 100.
Matches 421; Conservative
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Experimental source: kidney, C57BL
Comment: This enzyme is a lysosomal enzyme that hydrolyses the alpha-D-galactosyl resi
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C;Species: Gallus Gallus (chicken)
C;Species: Gallus (chicken)
C;Species
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
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C; Comment: This enzyme is a lysosomal enzyme that hydrolyses the alpha.
C; Genetics:
A;Genetics:
A;G
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; Score 1811; DB 2;
; Pred. No. 2.3e-147;
41; Mismatches 50;
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A;Residues: 1-161, A',163-465 <DA2>
A;Cres-references: UNIPARC:UPI000146A75; GB:L18754
C;Superfamily: alpha-galactosidase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        78.3%;
78.2%;
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Matches 327; Conservative
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A, Residues: 1-391 <RES>
A; Cross-references: UNIPARC:UPI0000175B1E; GB:M59199; NID:g1513066; PIDN:AAB06718.1; PID
A; Cross-references: UNIPARC:UPI0000175B1E; GB:M59199; NID:g1513066; PIDN:AAB06718.1; PID
A; Note: sequence extracted from NCBI backbone and corrected to correspond with the trans
C; Genetics:
A; Gene: GBB:NAGA
A; Cross-references: GDB:119445; OMIM:104170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C;Species: Homo sapiens (man)
C;Species: Homo sapiens (man)
C;Date: 21-Feb-1990 #sequence_revision 21-Feb-1990 #text_change 09-Jul-2004
C;Accession: A33265
R;Tsuji, S.; Yamauchi, T.; Hiraiwa, M.; Isobe, T.; Okuyama, T.; Sakimura, K.; Takahashi, Biochem. Biochys. Res. Commun. 163, 1498-1504, 1989
A;Title: Molecular cloning of a full-length cDNA for human alpha-N-acetylgalactosaminida A;Reference number: A33265; MUID:89392067; PMID:2551294
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A;Introns: 6/1; 51/2; 108/3; 168/1; 199/3; 253/3; 319/3
C;Superfamily: alpha-galactosidase
C;Superfamily: alpha-galactosidase
C;Keywords: alternative splicing; glycoprotein; glycosidase; hydrolase; lysosome
F;1-17/Domain: signal sequence #status predicted <51G>
F;1-17/Domain: signal sequence #status predicted <51G>
                                                                                                                                                                                                                                                                                                 A,Map position: 22q11-22q11

A,Introns: 6/1, 51/2; 108/3; 168/1; 199/3; 253/3; 319/3; 367/3

C;Antrons: 6/1, 51/2; 108/3; 168/1; 199/3; 253/3; 319/3; 367/3

C;Keywords: alternative splicing; glycoprotein; glycosidase; hydrolase; lysosome

C;Keywords: alternative splicing; predicted <810s

F;1-11/Donain: signal sequence #status predicted <810s

F;18-411/Product: alpha-N-acetylgalactosaminidase, splice form 2 #status predicted <81124,177,201,359,385,391/Binding site: carbohydrate (ABn) (covalent) #status predicted
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A;Cross-references: UNIPROT:P17050; UNIPARC:UPI000016ADB4; GB:M29276; NID:g189052; PIDN
A;Experimental source: clone pcD-HS1204
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DDCWMAPQRDSEGRLQADPQRFPHGIRQLANYVHSKGLKLGIYADVGNKTCAGFPG-SFG 150
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           151 YYDIDAQTFADWGVDLLKFDGCYCDSLENLADGYKHMSLALNRTGRSIVYSCEWPLYMWP 210
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              77
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      211 F-QKPNYTEIRQYCNHWRNFADIDDSWKSIKSILDWTSFNQERIVDVAGPGGWNDPDMLV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   32 LDNGLARTPIMGWLHWERFMCNLDCQEEPDSCISEKLFMEMAELMVSEGWKDAGYEYLCI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 411;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         41.2%; Score 952.5; DB 2; 50.0%; Pred. No. 9e-74; iive 55; Mismatches 120;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                388 LPVKRKLGFYEWTSRLRSH-----INPTGTVLLQL 417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   365 IYEAQDVYSGDIISGLRDETNFTVIINPSGVVMWYL 400
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A;Cross-references: GDB:119445; OMIM:104170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
A; Molecule type: DNA
A; Residues: 1-391 <RES>
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A, Molecule type: mRNA
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Matches 198;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 92
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Ancides Preference mumber mans

Ancides Preference in Unit and accession number, M3835, is not in Genbank ratease 113.0

Ancides Preference in Unit accession number, M3835, is not in Genbank ratease 113.0

Ancides Preference in Unit accession number, M3835, is not in Genbank ratease 113.0

Ancides Preference in Unit accession number, M3835, is not in Genbank ratease 113.0

Ancides Preference in Unit accession number, M3846; MUD:90321233; PMID:2172288

Ancestral type: mRNA

Ancestral type: mRNA

Ancestral gene: Ancestral genere in Unit across in Commun. 173, 13-19, 1990

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A35485
alpha-N-acetylgalactosaminidase (EC 3.2.1.49) precursor, splice form 2 - human
NyAlternate names: alpha-galactosidase B
C;Species: Homo sapiens (man)
C;Species: Homo sapiens (man)
C;Date: 31-Aug-1990 #sequence revision 31-Dec-1995 #text_change 09-Jul-2004
C;Accession: A36530; A35485; A37082; 139416
R;Wang, A.M.; Bishop, D.F.; Deenick, R.J.
J. Biol. Chem. 265, 21859-21866, 1990
A;Title: Human alpha-N-acetylgalactosaminidase-molecular cloning, nucleotide sequence,
                                                                                                                                                                                                                                                                     DDCWAAKQRDAEGRIVPDPERFPRGIKALADYVHARGLKLDIYGDLGRLTCGGYPGTTLD 120
                                                                                                                                                                                                                                                                                                                                                                                                                                          239
                                                                                                                                                                                                                   DDCWMAPQRDSEGRLQADPQRFPHGIRQLANYVHSKGLKLGIYADVGNKTCAGFPG-SFG 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           F-QKPNYTEIRQYCNHWRNFADIDDSWKSIKSILDWTSFNQERIVDVAGFGGWNDPDMLV 269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IGNFGLSWNQQVTQMALWAIMAAPLFMSNDLRHISPQAKALLQDKDVIAINQDPLGKQGY 329
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                                                                                       180 LPPKVNYTLLGEICNLWRNYDDIQDSWDSVLSIVDWPFTNQDVLQPFAGPGHWNDPDMLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   240 IGNFGLSYEQSRSQMALWTIMAAPLLMSTDLRTISPSAKKILQNRLMIQINQDPLGIQGR
                                                                                                                                                                                                                                                                                                                                                                                        151 YYDIDAQTFADWGVDLLKFDGCYCDSLENLADGYKHMSLALNRTGRSIVYSCEWPLYMWP
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Julya-galactosidase-like protein - Arabidopsis thaliana
NiAlternate names: protein F18021.270
C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Accession: T47748
R;Benes, V; Wurmbach, B.; Drzonek, H.; Ansorge, W.; Mewes, H.W.; Rudd, S.; Lemcke, K.; submitted to the Protein Sequence Database, April 2000
A;Reference number: Z24474
A;Accession: T47748
A;A
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A,Introns: 73/2, 93/1, 112/1, 123/3; 158/2, 182/3; 202/2; 224/2, 252/2, 274/1, 301/3; 33
A,Note: F18021.270
C,Superfamily: alpha-galactosidase
LGIYADVGNKTCAGFPGSFGYYDIDAQTFADWGVDLLKFDGCYCDSLENLA----DGYKH 186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LD----WISFNQERIVDVAGPGGWNDPDMLVIGNFGLSWNQQVTQMALWAIMAAPLFMSN 298
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C;Species: Coffea arabica (coffee)
C;pate: 21-Jul-2000 #sequence_revision 21-Jul-2000 #text_change 09-Jul-2004
C;Accession: TSO781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    41 GLVFSKSFNSIYDTSMYGRLQLNNGLARTPQMGWNSWNFFACN------INETVIK
                                                                                                            GKQGYQLRQGDNFEVWER----PLSG--LAWAVAMINRQEIGGPRSYTIAVASLGKGVACN
                                                                                                                                                                309 GIMGRLIKANSTDIGVYVKQITPSKGDKKSFAFAYLNRNEKEGYKRIBIQLASIG---LTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    11 GCALALRFLALVSWDIPGARALDNGLARTPTMGWLHWERFMCNLDCQEEPDSCISEKLFM
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Cispecies: Caenorhabditis elegans
Ribaris, B.
Submitted to the EMBL Data Library, July 1996
Aireference number: Z19830
Aireference number: Z19830
Aireference number: Z19830
Aireference number: Z19830
Aireference number: Caenoric number: Cispecies: Caenoric number: Cispecies: Caenoric number: Cispecies: Cispecies: Cispecies: Cispecies: Caenoric number: Cispecies: Ci
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9
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                                                                                                                                                                                                                                                                                                                                                                                                        DDCWMAPQRDSEGRLQADPQRFPHGIRQLANYVHSKGLKLGIYADVGNKTCAGFPG-SFG 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             151 YYDIDAQTFADWGVDLLKFDGCYCDSLENLADGYKHMSLALMRTGRSIVYSCEWPLYMWP 210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      137 KVVQDAQTFAEWKVDMLKLDGCF-STPEEAAQGYPKMAAGLNATGRPIAFSCSWPAYEGG 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              256 IGNFGLSLEQSRAQMALWTVLAAPLLMSTDLRTISAQNMDILQNPLMIKINQDPLGIQGR 315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   88 YLCIDDCWMAPQRDSEGRLQADPQRFPHGIRQLANYVHSKGLKLGIYADVGNKTCAGFPG 147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3 SVHIDDCWSEMERDSHGILVANKTRFPSGMKALAKYMHDRGLKFGIYEDYGTKTCGGYPG 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      265 PDMLVIGNFGLSWNQQVTQMALWAIMAAPLFMSNDLRHISPQAKALLQDKDVIAINQDPL 324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  hypothetical protein R07B7.11 - Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Date: 15-Oct.1999 #sequence_revision 15-Oct.1999 #text_change 09-Jul-2004
C;Accession: T24018
   F;124,177,201/Binding site: carbohydrate (Asn) (covalent) #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       F-OKPNYTEIROYCNHWRNFADIDDSWKSIKSILDWTSFNQERIVDVAGPGGWNDPDMLV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                191 L--IDHPELVNYNLIGKYCNTWRNFDDINSSWKSIISIISYYDKMQDKHIPTHGPGKWHD
                                                                                                                                                                                                                    32 LDNGLARTPTMGWLHWERFMCNLDCQEEPDSCISEKLFMEMAELMVSEGWKDAGYEYLCI
                                                                                                                                                                                                                                                                 IGNFGLSWNQQVTQMALWAIMAAPLFMSNDLRHISPQAKALLQDKDVIAINQDPLGKQGY
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                                                                          Length 358;
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43.6%; Pred. No. 5.8e-66;
tive 62; Mismatches 149; Indels
                                                                                                                                                 Indels
                                                               40.2%; Score 930; DB 2;
ilarity 57.7%; Pred. No. 6.4e-72;
Conservative 40; Mismatches 85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Map position: 5;Introns: 61/1; 107/3; 317/3; 351/3; Superfamily: alpha-galactosidase
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37.3%;
Best Local Similarity 43.6%;
Matches 174; Conservative 6
                                                                                                        Local Similarity
les 176; Conserv
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RIHKG 320
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alpha-galactosidase (EC 3.2.1.22) - kidney bean cliparies shaseolus vulgaris (kidney bean) clate: 16-Jul-1999 #sequence_revision 16-Jul-1999 #text_change 09-Jul-2004 clate: 16-Jul-1999 #sequence_revision 16-Jul-1999 #text_change 09-Jul-2004 clacession: T10860 clate Library, August 1994 submitted to the BMBL Data Library, August 1994 alpha galactosidase gene. Alpha cription: Cloning and expression of a pinto bean alpha galactosidase gene. Alpha seription: T10860 clate type: mRNA Alpha clate type: mRNA t
                                                                                                                                                                                                                                                                                                                                                                334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           249
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                                                                                                                                                                                                                                                                                                DMLVIGNEGLSWNQQVTQMALWAIMAAPLFMSNDLRHISPQAKALLQDKDVIAINQDPLG 325
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QERIVDVAGPGGWNDPDMLVIGNFGLSWNQQVTQMALWAIMAAPLFMSNDLRHISPQAKA 309
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alpha-galactosidase (EC 3.2.1.22) precursor - guar
C;Species: Cyamopsis tetragonoloba (guar, cluster bean)
C;Date: 29-Jan-1993 #sequence_revision 29-Jan-1993 #text_change 09-Jul-2004
C;Accession: S07472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GRSIVYS-CEWPLYMWPPQKPNYTEIRQYCNHWRNFADIDDSWKSIKSILD----WTSFN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Description: catalyzes hydrolysis of melibiose into galactose and glucose
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEGWKDAGYEYLCIDDCWMAPQRDSEGRLQADPQRPPHGIRQLANYVHSKGLKLGIYADV
                                                                          |||| :|| |: : ::|::||| |: |:|| DMLEVGNGGMTTEELLSNKEVIAVNQDKLG
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                                                                                                                                                                      210 PFQKPNYTEIRQYCNHWRNFADIDDSWKSIKSILD----WTSFNQERIVDVAGPGGWNDP
                                                                                                                                                                                                                                      --SEDPATWAKSVGNSWRTTGDIQDKWDSMISRADLNDKWASY-----AGPGGWNDP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19 LALVSWDIPGARAL-DNGLARTPTMGWLHWERFMCNLDCQEEPDSCISEKLFMEMAELMV
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LLSNEEVIAVNQDKLGVQGKKVKSNNDLEVWAGPLSNNRLAVILWNR 368
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 425;
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29.5%; Score 682; DB 2; Li
Best Local Similarity 41.5%; Pred. No. 1.5e-50;
Matches 144; Conservative 54; Mismatches 113;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             335 VOGKKVKSTNDLEVWAGPLSNNKVAVILWNR 365
                                                                                                                                                                                                                                                                                                                                                                                                                                 KOGYQLROGDNFEVWERPLSGLAWAVAMINR 356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Superfamily: alpha-galactosidase
Keywords: glycosidase; hydrolase
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C;Species: Glycine max (soybean)
C;Species: To Sale
C;Species: To Sale
C;Species: To Sale
C;Sacession: To Sale
A;Description: Cloning and expression of a soybean alpha galactosidase gene.
A;Reference number: Z15645
A;Reference number: Z15645
A;Reference number: Z15645
A;Reference number: Z15648
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Status: preliminary;
A;Molecule type: mRNA
A;Residues: 1-422 cDAV>
A;Cross-references: UNIPROT: 039811; UNIPARC: UPI00000A7200; EMBL: U12926; NID: 9927574; PID
A;Experimental source: strain williams
C;Function:
A;Description: catalyzes hydrolysis of melibiose into galactose and glucose
C;Superfamily: alpha-galactosidase
C;Superfamily: alpha-galactosidase
C;Keywords: glycosidase; hydrolase
R; Zhu, A.; Goldstein, J.

Gene 140, 227-231, 1994

Gene 140, 227-231, 1994

Gene 140, 227-231, 1994

A; Title: Cloning and functional expression of a cDNA encoding coffee bean alpha-galactos

A; Feference number: 225235; MUID:94193002; PMID:8144030

A; Accession: T50781

A; Status: pression: T50781

A; Status: pression: T50781

A; Status: pression: T50781

A; Cross-references: UNIPROT:Q42656; UNIPARC:UPI00001256A8; EMBL:L27992; PIDN:AAA33022.1

C; Superfamily: alpha-galactosidase

C; Keywords: glycosidase; hydrolase
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DDCWMAPQRDSEGRLQADPQRFPHGIRQLANYVHSKGLKLGIYADVGNKTCA-GFPGSFG 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      YYDIDAQTFADWGVDLLKFDGCYCDSLENLADGYKHMSLALNRTGRSIVYS-CEWPLYMW 209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PFQKPNYTEIRQYCNHWRNFADIDDSWKSIKSILD----WTSFNQERIVDVAGPGGWNDP 265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DMLVIGNFGLSWNQQVTQMALWAIMAAPLFWSNDLRHISPQAKALLQDKDVIAINQDPLG 325
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LANGLGLTPPMGMNSWNHPRCNLD-------EKLIRETADAMVSKGLAALGYKYINL 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       91
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       32 LDNGLARTPTMGWLHWERFMCNLDCQEEPDSCISEKLFMEMAELMVSEGWKDAGYEYLCI
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                      DB 2; Length 378;
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30.8%; Score /12; up z; ucusur.
Best Local Similarity 42.5%; Pred. No. 3.4e-53;
Matches 152; Conservative 51; Mismatches 113; Indels
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29.7%; Score 687.5; DB 2;
Best Local Similarity 43.2%; Pred. No. 4.9e-51;
Matches 143; Conservative 45; Mismatches 112;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 32
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Cispecies: Schizosaccharomyces pomber Cispecies: Schizosaccharomyces pomber Cispecies: O3-Dec-1999 #sequence_revision O3-Dec-1999 #text_change O9-Jul-2004 Cipate: O3-Dec-1999 #sequence_revision O3-Dec-1999 #text_change O9-Jul-2004 Cipate: O3-Dec-1999 #sequence_revision O3-Dec-1999 W.A.; Barrell, B.G. submitted to the EMBL Data Library, November 1999 W.A.; Barrell, B.G. A;Reference number: 221829 A;Accession: T3918 A;Accession: 
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                   141 FGIYTSAGTKTCSSIGFPGALGHEYSDARQFADWGVDYLKYDNCNNQGVD-AKQRYTTMR 199
                                                                                                                                                              DALAATGRPIVYSICEWGENKP---WEWA----GDLGQL---WRTTGDINDSWGSMSSIM 249
                                                                                                                                                                                                                                                 DWTSFNQERIVDVAGPGGWNDPDMLVIGNFGLSWNQQVTQMALWAIMAAPLFMSNDLRHI 303
                                                                                                                                                                                                                                                                                        K----SNLELAEYARPGGWNDPDMLEVGNGGMTDTEYRTHFSMWSIWAAPLLIGTDLRTA 305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SYTIAVASLGKGVACNPACFITQLLPVKRKLGFYE-W-----TSRLRSHINPTGTVLL 415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     362 AQRIETTAKAVG-------LPKSRGYTWRDLWKHSDTNTTGRIAATVPAHGTVLV 409
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                                                                                                                                                                                                                                                                                                                                                                                                   304 SPQAKALLQDKDVIAINQDPLGKQGYQLRQGDNFEVWERPLSGLAWAVAMINRQEIGGPR
                                                                                                                                                                                                                                                                                                                                                                                                                                                   10 LGCALALRFLALVSWDIPGARALDNGLARTPTMGWLHWERFMCNLDCQEEPDSCISEKLF
                                                                                              LALNRIGRSIVYS-CEW----PLYMWPFQKPNYTBIRQYCNHWRNFADIDDSWKSIKSIL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     probable alpha-galactosidase - fission yeast (Schizosaccharomyces pombe)
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35.8%; Pred. No. 2.7e-44;
live 65; Mismatches 119; Indels
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Matches 136; Conservative
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RV 411
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C;Superfamil...
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C;Species: Streptomyces coelicolor
C;Species: Streptomyces coelicolor
C;Species: O3-Dec-1999 #sequence_revision 03-Dec-1999 #text_change 09-Jul-2004
C;Accession: T36472
R;Seeger, K.J.; Harris, D.; Thomson, N.R.; Parkhill, J.; Barrell, B.G.; Rajandream, M.A.
R;Seeger, K.J.; Harris, D.; Thomson, N.R.; Parkhill, J.; Barrell, B.G.; Rajandream, M.A.
R;Seeger, K.J.; Harris, D.; Thomson, N.R.; Parkhill, J.; Barrell, B.G.; Rajandream, M.A.
A;Accession: T36472
A;Acce
R;Overbeeke, N.; Fellinger, A.J.; Toonen, M.Y.; van Wassenaar, D.; Verrips, C.T. Plant Mol. Biol. 13, 541-550, 1989
A;Title: Cloning and nucleotide sequence of the alpha-galactosidase cDNA from Cyamopsis A;Reference number: S07472; MUID:91370836; PMID:2577496
A;Refession: S07472
A;Molecule type: mRNA
A;Residues: 1-411 <OVE>
A;Cross-references: UNIPROT:P14749; UNIPARC:UPI00001256A9; EMBL:X14619; NID:918291; PIDN A;Note: the authors translated the codon ATT for residue 20 as Asn, TAT for residue 140 C;Superfamily: alpha-galactosidase
C;Keywords: glycosidase; hydrolase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      159 EEQDAKTFASWGVDYLKYDNC----ENLGISVKERYPPMGKALLSSGRPIFFSMCE--- 210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LGIYADVGNKTCA--GFPGSFGYYDIDAQTFADWGVDLLKFDGCYCDSLENLADGYKHMS 188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 YDIDAQTFADWGVDLLKFDGCYCDSLENLA----DGYKHMSLALNRTGRSIVYS-CEWPL 206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NDPDMLVIGNFGLSWNQQVTQMALWAIMAAPLFMSNDLRHISPQAKALLQDKDVIAINQD 322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            92
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                29 GLAVSAQAVPAAAPDPAPASSGHEQLALTPPMGFNNWN----STHCRDE----FNESMVK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DCWMAPQRDSEGRLQADPQRFPHGIRQLANYVHSKGLKLGIYADVGNKTCA-GFPGSFGY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ENGLGOTPPPMGWNSWNHFGCD-----INENVVRETADAMVSTGLAALGYQYINLD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        33 DNGLARTPTMGWLHWERFMCNLDCQEEPDSCISEKLFMEMAELMVSEGWKDAGYEYLCID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   207 YMWPFQKPNYTEIRQYCNHWRNFADIDDSWKSIKSILD----WTSFNQERIVDVAGPGGW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           211 --WGWEDPQIW-AKSIGNSWRTTGDIEDNWNSMTSIADSNDKWASY-----AGPGGW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 411;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 29.5%; Score 681.5; DB 2; Best Local Similarity 42.2%; Pred. No. 1.5e-50; Matches 141; Conservative 52; Mismatches 102;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            323 PLGKQGYQLRQGDNFEVWERPLSGLAWAVAMINR 356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       320 KLGVQGKKVKSTNDLEVWAGPLSDNKVAVILWNR 353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     260
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           Attlernate names: melibiase
C;Species: Mortierella vinacea
C;Species: Biochem. 61, 592-598, 1997
A;Title: Purification, characterization, and cDNA cloning of a novel alpha-galactosidase
A;Reference number: JG5558; MUID:97290877; PMID:9145516
A;Reference number: JG5558; MUID:97290877; PMID:9145516
A;Residues: 1-396 <SHI>
A;Residues: 1-396 <SHI>
A;Residues: 1-396 <SHI>
A;Residues: 1-396 <SHI>
A;Accession: PC4479
A;Accession: PC4479
A;Accession: PC4479
A;Accession: PC4479
A;Molecule type: protein
A;Molecule t
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DDCWMAPQRD-SEGRLQADPQRFPHGIRQLANYVHSKGLKLGIYADVGNKTCAGFPGSFG 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -CEWPL-YMWPFQKPNYTEIRQYCNHWRNFADIDDSWKSIKSILDWTSFNQERIVDVAGF 259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              187 LCSWGTDDVWDWGRSIGGQ-----SWRMSGDISDNWSSVVSI----TGQAVPIANISAP 236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DDCWSLHQRDNTTQRIAPDPTKFPNGISGVASKVHALGLKFGIYSDAGTNTCAGYPGSYG 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  151 YYDIDAQTFADWGVDLLKFDGCYCDSLENL-----ADGYKHMSLALNRTGRSIVYS 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           132 YEAIDAQAFSDWGVDYLKYDNC----NNLGLAGNATISSKRYKRMGDALKNVSRPIFFS 186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     260 GGWNDPDMLVIG-NFGLSWNQQVTQMALWAIMAAPLFMSNDLRHISPQAKALLQDKDVIA 318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      91
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C;Species: Zygosaccharomyces cidri
C;Species: Zygosaccharomyces cidri
C;Accession: S45453
R;Turakainen, H.; Hankaanpaeae, M.; Korhola, M.; Aho, S.
Yeast 10, 733-745, 1994
A;Title: Characterization of MEL genes in the genus Zygosaccharomyces.
A;Reference number: S45453; MUID:95066377; PMID:7975892
A;Accession: S45453
A;Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  32 LDNGLARTPTMGWLHWERFMCNLDCQEEPDSCISEKLFMEMAELMVSEGWKDAGYEYLCI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       22 IDPSLAKTPOMGWNSWNKYQCN------VNETVIINTANAMVSSGLKDLGYHYINI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
25.8%; Score 598; DB 2; Length 396;
Best Local Similarity 37.4%; Pred. No. 2.1e-43;
Matches 126; Conservative 57; Mismatches 116; Indels 38; Gaps
pha-galactosidase (EC 3.2.1.22) II precursor - Mortierella vinacea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   319 INQDPLGKQGYQLRQGDNFEVWERPLSGLAWAVAMIN 355
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A;Residues: 1-469 <TUR>
A;Cross-references: UNIPROT:Q99172; UNIPARC:UPI0000696F1; EMBL:L24957; NID:g538518; PI
A;Cross-references: UNIPROT:Q99172; UNIPARC:UPI0000696F1; EMBL:L24957; NID:g538518; PI
C;Genetics:
A;Gene: MEL
C;Superfamily: alpha-galactosidase
C;Superfamily: alpha-galactosidase; hydrolase
C;Keywords: glycoprotein; glycosidase; hydrolase
F;1-17/Domain: signal sequence #status predicted <NAT>
F;18-469/Product: alpha-galactosidase MEL #status predicted <NAT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 114 SAGEYTCAGYAGSLGYEDMDAATFASWDVDYLKYDNCYNKGEFGTPEISYKRYKAMSDAL 173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LWAIMAAPLFMSNDLRHISPQAKALLQDKDVIAINQDPLGKQG----YQLRQGDNF--- 337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  76 MVSEGWKDAGYEYLCIDDCWMAPQRDSEGRLQADPQRFPHGIRQLANYVHSKGLKLGIYA 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    136 DVGNKTCAGFPGSFGYYDIDAQTFADWGVDLLKFDGCY----CDSLENLADGYKHMSLAL 191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     174 NKTGRPIFYSLCNWGQDLTFYWG-----SAISNSWRMSGDVYPQFDRPDSRCPCSG 224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                54
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                             18 FLALV--SWDIPGARALDNGLARTPTMGWLHWERFMCNLDCQEEPDSCISEKLFMEMAEL
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Best Local Similarity 35.3%
Matches 134; Conservative
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GenCore version 5.1.6 Copyright (c) 1993 - 2005 Compugen Ltd.

- nucleic search, using sw model OM nucleic

December 26, 2005, 04:08:03 ; Search time 6366 Seconds (without alignments) 11304.400 Million cell updates/sec Run on:

US-10-602-219-11 1266 1 atgcagctgaggaacccaga.....agctagaaaacacaatgtaa 1266 Title: Perfect score: Sequence:

Scoring table: IDENTITY_NUC Gapext 1.0 *:* .

11766282 Total number of hits satisfying chosen parameters:

5883141 segs, 28421725653 residues

Searched:

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries Minimum DB seq length: 0 Maximum DB seq length: 2000000000

9b ba: *
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

	-	Description	AR653696 Sequence	AR654964 Seguence	AR653697 Sequence	AR654965 Sequence	AR653694 Sequence	AR654962 Sequence	AR653692 Sequence	AR654960 Sequence	AR653695 Sequence	AR654963 Sequence	AR653693 Sequence	AR654961 Sequence	CS135670 Sequence	BT006864 Homo sapi	AY889631 Synthetic	AY889632 Synthetic	AY892090 Synthetic	BT007835 Synthetic
SUMMARIES	:	ar	AR653696	AR654964	AR653697	AR654965	AR653694	AR654962	AR653692	AR654960	AR653695	AR654963	AR653693	AR654961	CS135670	BT006864	AY889631	AY889632	AY892090	BT007835
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	& Query	Match	100.0	100.0	99.8	99.8	99.8	99.8	99.8	8.66	99.8	99.8	99.8	99.8	99.7	99.7	99.7	99.7	99.7	99.7
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3	AR101984 Sequence BD064229 Therapy f BD247365 Treatment CS105027 Sequence AR234439 Sequence	Ax3.2196 Sequence Ax3.72138 Sequence CQ899396 Sequence CS033394 Sequence CS035758 Sequence CS042246 Sequence CS044710 Sequence	AX780273 Sequence 130313 Sequence AX030659 Sequence BD134457 Human nuc AX017286 Sequence AX524990 Sequence	AK222627 Homo sapi CQ882046 Sequence AX330543 Sequence X16889 Human alpha
	AR101984 BD064229 BD247365 CS105027 AR234439	AK22462 AK372138 CQ899396 CS033394 CS035758 CS044710		AK222627 CQ882046 AX330543 HSAGALPS
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ALIGNMENTS

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linear P								ts by transien		lle, CA			
1266 bp DNA	US 6887696.						Garger, S.J., Turpen, T.H. and Kumagai, M.H.	Production of lysosomal enzymes in plants by transient expression	03-MAY-2005;	Large Scale Biology Corporation; Vacaville, CA	Eiers		1 4100
	Sequence 11 from patent US 6887696 AR653696	AR653696.1 GI:67584281			ied.	1 (bases 1 to 1266)	J., Turpen, T.H.	on of lysosomal	Patent: US 6887696-A 11 03-MAY-2005;	le Biology Corr	Location/Qualifiers	11266	"myordania moineparo/
AR653696	Sequence AR653696	AR653696.	Unknown.	Unknown.	Unclassified.	1 (bases	Garger, S.	Productic	Patent: 1	Large Sca			
RESULT 1 AR653696 LOCUS	DEFINITION ACCESSION	VERSION	SOURCE	ORGANISM		REFERENCE	AUTHORS	TITLE	JOURNAL		FEATURES	source	

/organism="unknown" /mol_type="genomic DNA"

ORIGIN

; 0 DB 6; Length 1266; 0; Indels Query Match 100.0%; Score 1266; Best Local Similarity 100.0%; Pred. No. 0; Matches 1266; Conservative 0; Mismatches

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Unclassified.

1 (bases 1 to 1266)

S Gargery.S.J. Turpen,T.H. and Kumagai,M.H.
Production of lysosomal enzymes in plants by transtent: US 6890748-A 11 10-WAY-2005;
Large Scale Biology Corporation; Vacaville, CA
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Garger,S.J., Turpen,T.H. and Kumagai,M.H.
Garger,S.J., Turpen,T.H. and Kumagai,M.H.
Production of lysosomal enzymes in plants by transient expression
Patent: US 6887696-A 7 03-MAY-2005;
Large Scale Biology Corporation; Vacaville, CA
Location/Qualifiers
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Garger, S.J., Turpen,T.H. and Kumagai,M.H.
Groduction of lysosomal enzymes in plants by
Patent: US 6890748-A 13 10-MAY-2005;
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පි සි	241 TGGAAGGATGCAGGTTATGAGTACCTCTGCATTGATGACTGTTGGATGGCTCCCCAAAGA 300	200000
3 & 3	GATTCAGAAGGCAGACTTCAGGCAGACCCTCAGGGCTTTCCTCATGGGATTCGCCAGCTA	DEFINITION Sequence 7 from patent US 68907 ACCESSION AR654962 VERSION AR654962.1 GI:67586501
සි දි	301 GATICAGAAGGCAGACTICAGGCAGACCCTCAGCGCTTICCTCATGGGATTCGCCAGCTA 360 361 GCTAATTATGTTCACAGCAAAGGACTGAAGCTAGGGATTTATGCAGATGTTGGAAATAAA 420	KEYWOKDS . SOURCE Unknown. ORGANISM Unknown.
; 음	GCTAATTATGTTCACAGCAAAGGACTGAAGCTAGGGATTTATGCAGATGTTGAAAATAAA	
දු දු	421 ACCTGCGCAGGCTTCCCTGGGAGTTTTGGATACTACGACATTGATGCCCAGACCTTTGCT 480 	AUTHOKS Garger, S.J., Turpen, T.H. and Ku TITLE Production of lysosomal enzymes JOURNAL Patent: US 6890748-A 7 10-MAY-2 Larqe Scale Biology Corporation
: &	GACTGGGGAGTAGATCTGCTAAAATTTGATGGTTGTTACTGTGACAGTTTGGAAAATTTG	FEATURES Location/Qualifiers source 11278
GD GD		/organism="unknown" /mol_type="genomic DN
% q	541 GCAGATGGTTATAAGCACATGTCCTTGGCCCTGAATAGGACTGGCAGAAGCATTGTGTAC 600 	Query Match 99.8%; Score 126 Best Local Similarity 99.9%; Pred. No.
à i	TCCTGTGAGTGGCCTCTTTATATGTGGCCCTTTCAAAAGCCCAATTATACAGAAATCCGA	Matches 1264; Conservative U; Mismat Oy 1 ATGCAGCTGAGGAACCCAGAACTACATCT
8 8	601 TCCTGTGAGTGGCCTCTTTATATGGGCCCTTTCAAAAGCCCAATTATACAGAAATCCGA 660 661 CAGTACTGCAATCACTGGGGAAATTTTGGTGATGATGATTCCTGGAAAAGTATAAAAG 720	Db 1 ATGCAGCTGAGGAACCCAGAACTACATC
3 8		Oy 61 CTCGTTTCCTGGGACATCCCTGGGGCTAG
ð i	AGTATCTTGGACTGGACATCTTTTAACCAGAGAGAGAGTTGTTGATGTTGCTGGACCAGGG	121
යි යි	721 AGTATCTTGGACTGGACATCTTTTAACCAGGAGAGAATTGTTGATGTTGCTGGACCAGGG 780 781 GGTTGGAATGACCCAGATATGTTAGTGATTGGCAACTTTGGCCTCAGCTGGAATCAGCAA 840	Db 121 ACCATGGCTGCTGCACTGGGACGCTT
g q	GCTTGGAATGACCCAGATATGTTAGTGATTGGCAACTTTGGCCTCAGCTGGAATCAGCAA	Qy 181 GATTCCTGCATCAGTGAGAAGCTCTTCAT
ò	841 GTAACTCAGATGGCCCTCTGGGCTATCATGGCTGCTTCTTATTCATGTCTAATGACCTC 900	241
qq	GTAACTCAGATGGCCCTCTGGGCTATCATGGCTGCTCCTTTATTCATGTCTAATGACCTC	
දු පු	901 CGACACATCAGCCCTCAAGCCCTTCAGGATAAGGACTAATTGCCATCAAT 960 	Oy 301 GATTCAGAAGGCAGACTTCAGGCAGACCC
중 원	961 CAGGACCCTTGGGCAAGCAAGGTACCAGCTTAGACAGGGAGACAACTTTGAAGTGTGG 1020 	361
රි ස්		Db 361 GCTAATTATGTTCACAGCAAAGGACTGAA Qy 421 ACCTGGGCAGGCTTCCCTGGGAGTTTTGG
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GCTTCCCTGGGTAAAGAGTGGCCTGTAATCCT 1140 ACAGGCACTGTTTGCTTCAGCTAGAAAACACA 1260 linear PAT 13-JUN-2005 AGAGCACTGGACAATGGATTGGCAAGGACGCCT 120 TTCATGTGCAACCTTGACTGCCAGGAAGAGCCA 180 ATGGAGATGGCAGAGCTCATGGTCTCAGAAGGC 240 IGCATTGATGACTGTTGGATGGCTCCCCAAAGA 300 CCTCAGCGCTTTCCTCATGGGATTCGCCAGCTA 360 GGATACTACGACATTGATGCCCAGACCTTTGCT 480 Kumagai,M.H.
les in plants by transient expression -2005; Vacaville, CA CTGGGCTGCGCCTTGCGCTTCGCTTCCTGGCC 60 0; Gaps 263.4; DB 6; Length 1278; o. 0; atches 1; Indels 0; DNA bp 0748. "AN

	721 721 781 841 841 901 901 1021 1021 1081 1141 1141 1201 1201 1201 1201 1201	RESULT 9 AR653695 AR653695 AR653695 1296 bp DNA linear PAT 13-JUN-2005 DEFINITION Sequence 9 from patent US 6887696. ACCESSION AR653695
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1 (bases 1 to 1296)

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Production of lysosomal enzymes in plants by Patent: US 6890748-A 9 10-MAY-2005;

Large Scale Biology Corporation; Vacaville, C Location/Qualifiers
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1 carger, S.J., Turpen, T.H. and Kumagai, M.H.
Production of lysosomal enzymes in plants by
Patent: US 6887696-A 9 03-MAY-2005,
Large Scale Blology Corporation, Vacaville, C
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larity 99.9%; Pred. No. 0;
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Garger, S.J., Turpen, T.H. and Kumagai, M.H.
Production of lysosomal enzymes in plants by
Patent: US 6887696-A 5 03-MAY-2005;
Large Scale Biology Corporation; Vacaville, C
Location/Qualifiers
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Sequence 5 from patent US 6887696.
AR653693.1 GI:67584278
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/organism="unknown"
/mol_type="genomic DNA"
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Homo sapiens
Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Bumaniaia, Eutheria, Euarchontoglires, Primates, Catarrhini,
Hominidae, Homo.
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Homo sapiens galactosidase, alpha mRNA, complete cds.
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Crystal structure of human a-galactosidase
Patent: WO 2005069192-A 1 28-JUL-2005;
Transkaryotic Therapies, Inc. (US); Selden, Richard F. (US);
Tanskaryotic Therapies, Inc. (US); Selden, Richard F. (US);
Garboczi, David N. (US); Treco, Douglas A. (US); NIH/NIAID (US);
Garman, Scott C. (US); Borowski, Marianne (US); Kinoshita, Carol M. (US)
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CTCGTTTCCTGGGACATCCCTGGGGCTAGAGCACTGGACAATGGATTGGCAAGGACGCCT
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Sequence 1 from Patent WO2005069192.
CS135670 GI:72056330
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1. .1290
/organism="Homo sapiens"
/mol_type="unassigned DNA"
/db_xref="taxon:9606"
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Pred. No. 0;
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Homo sapiens (human)
Homo sapiens
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Mammalia; Eutheria;
Hominidae; Homo.
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Matches 1263; Conservative
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AY889631 1290 bp mRNA linear SYN 29-MAR-2005
Synthetic construct Homo sapiens clone FLH025769.01X galactosidase
alpha (GLA) mRNA, complete cds.
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                                                                                                                                                           Exaluna, N., Chen, X., Rolfs, A., Halleck, A., Hines, L., Eisenstein, S., Kanlina, N., Chen, X., Rolfs, A., Halleck, A., Hines, L., Eisenstein, S., Koundinya, M., Raphael, J., Moreira, D., Kelley, T., LaBaer, J., Lin, Y., Phelan, M. and Farmer, J., Moreira, D., Kelley, T., LaBaer, J., Lin, Y., Phelan, M. and Farmer, J. Bosciences Clontech, 1020 East Meadow Circle, Palo Alto, CA 94303, USA This CDS clone is a part of a collection of human full length expression clones generated by BB Biosciences Clontech and the Harvard Institute of Proteomics. Each CDS has been cloned in two forms: with and without stop-codon (to allow fusion with C-terminal tag). The CDS has been directionally cloned using BD In-Fusion (TW) cloning system between the Sall and HindIII sites of the pDNR-DUAL vector. Additional sequences in the clone: 'ACC' after Sall site and before HindIII site to maintain reading frame. Clone distribution: http://bioinfo.clontech.com/orfclones.
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LHWERFMCNLDCQEEPDSCISEKLFMEMAELMVSEGWKDAGYEYLCIDDCWMAPQRDS
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/mol_type="mRNA"
/db_xref="taxon:s606"
/db_cref="taxon:s606"
/clone="GH00112X1.0"
/clone=lib="BD Creator(TM) CDS Library derived from MGC
collection"
/lab_host="DH5alpha T1 resistant"
/note="Vector: pDNR-Dual"
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/protein_id="AAP35510.1"
/db_xref="GI:30582567"
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                                                                                                                                                                                                                                                                                             Direct Submission

Submitted (04-JAN-2005) Biological Chemistry and Molecular Pharmacology, Harvard Institute of Proteomics, 320 Charles St., Cambridge, MA 02141, USA

This CDS clone is a part of a collection of human full-length expression clones generated by Harvard Institute of Proteomics.

This ORF clone has been cloned with normalized stop-codon. The CDS has been directionally cloned using BD In-Fusion(TM) cloning system between the SalI and HindIII sites of the pDNR-Dual vector.

Additional sequences in the clone: 'ACC after SalI site and before 'ATG' to provide Kozak consensus sequence. Each clone is clonally isolated and full-length sequence-verified.

Location/Qualifiers
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WNQOYTQWALWAIMAAPLFMSNDLRHISPQARKALLQDKOVIAINQDPLGKQGYQLRQG
DNFFWWERPLSGLAMAVAMINRQEIGGPRSYTIAVASLGKGVACNPACFITQLLPVKR
KLGFYEWTSRLRSHINPGTVLLQLENTWQMSLKODL."
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                                                                                                                         Raphael, J., Kelley, F.,
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Cloning of human full-length CDS in Creator (TM) recombinational
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AY889631.

AY889631.1 GI:60655716

Human ORP Project.

Synthetic construct

Synthetic construct

Synthetic construct

Orlers sequences, artificial sequences.

I bases 1 to 1290

Hines, L., Rolfs, A., Jepson, D., Moreira, D., Raphael, J., Kelley, Shen, B., Halleck, A., Xoundinya, M., Hu, Y., Zuo, D., Taycher, B.,
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/mol_type="mRNA"
/mol_xref="texon:32630"
/clone="FLHGOS766;01X"
/lab_host="Escherichia coli DH5alpha T1 resistant"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99.7%; Score 1261.8; DB 11; Length 1290; 99.8%; Pred. No. 0; 99.8%; ive 0; Mismatches 2; Indels 0;
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Search completed: December 26, 2005, 07:09:28 Job time : 6371 secs

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9: geneseqn2033as:* Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

		Description	Aad45223 Human rGA	Add84750 Human al	Adj88276 Human WT	Adm48680 Human wi	Adu66915 Human alp	Aea27444 Human al	Aad45224 Human rGA	Add84752 Human al	Adj88278 Human WT	Adm48682 Human wi	Adu66917 Human alp	Aea27446 Human al	Aad45221 Human rGA	Add84746 Human al	Adj88272 Human rGA	Adm48676 Human wi	Adu66911 Human al	Aea27440 Human alp	The women's Oronapas
		ID	AAD45223	ADD84750	ADJ88276	ADM48680	ADU66915	AEA27444	AAD45224	ADD84752	ADJ88278	ADM48682	ADU66917	AEA27446	AAD45221	ADD84746	ADJ88272	ADM48676	ADU66911	AEA27440	01037044
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Novel human alpha-galactosidase polypeptide useful for treating lysosomal storage diseases.

WPI; 2002-681656/73. P-PSDB; AAE28210.

Claim 1; Page 42-44; 88pp; English.

Add84742 Human alp	Adj88268 Human WT	Adm48672 Human wil	Adu66907 Human alp	Aea27436 Human alp	Aad45222 Human rGA	Add84748 Human alp	Adj88274 Human WT	Adm48678 Human wil	Adu66913 Human alp	Aea27442 Human alp	Aad45220 Human WT-	Add84744 Human alp	Adj88270 Human WT	Adm48674 Human wil	Adu66909 Human alp	Aea27438 Human alp	Adn49739 Human alp	Adu74415 Human alp	Aeb43187 Human alp	Abz79777 Human alp	Acf80581 Human alp	Adh54464 Human alp			Aaa70685 Human alp	
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ALIGNMENTS

Human; alpha-galactosidase; lysosomal enzyme; lysosomal storage disease; therapeutic; rGAL-8; gene; ds. Location/Qualifiers
1. 1266
/*tag= a /product= "Human rGAL-8 protein" Kumagai MH; AAD45223 standard; DNA; 1266 BP 26-JUL-2000; 2000US-00626127. 13-NOV-2001; 2001US-00993059. (first entry) Garger SJ, Turpen TH, (GARG/) GARGER S J. (TURP/) TURPEN T H. (KUMA/) KUMAGAI M H. Human rGAL-8 DNA. US2002088024-A1. 27-DEC-2002 Homo sapiens 04-JUL-2002. AAD45223; Key RESULT 1 AAD45223

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New polynucleotide for producing active recombinant human and animal
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(KUMA/) KUMAGAI M H.
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The invention relates to human alpha-galactosidase truncated at the carboxy terminus and the production of enzymatically active recombinant human and animal lysosomal enzymes. The invention is useful for producing lysosomal enzymes for treating lysosomal storage diseases, producing altered or mutated proteins, enzymatically active or otherwise, to serve as precursors or substrates for further in vivo or in vitro processing to a specialised industrial form for research or therapeutic uses, to produce more effective therapeutic enzyme, for producing antibodies against lysosomal enzymes for medical diagnostic use, and in any commercial process that involves substrate hydrolysis. The present sequence is human rGAL-8 DNA
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s; Pred. No. 0;
0; Mismatches
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Best Local Similarity 100.0%;
Matches 1266; Conservative 0
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GTAACTCAGATGGCCCTCTGGGCTATCATGGCTGCTCCTTTATTCATGTCTAATGACCTC
                              GTAACTCAGATGGCCCTCTGGGGCTATCATGGTGCTCCTTTATTCATGTCTAATGACCTC
                                                                                                                CGACACATCAGCCCTCAAGCCTCTCCTTCAGGATAAAGGACGTAATTGCCATCAAT
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/*tag= a
/product= "Human rGAL-8"
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GGTTGGAATGACCCAGATATGTTAGTGATTGGCAACTTTGGCCTCAGCTGGAATCAGCAA
                                                                                                                                                CGACACATCAGCCCTCAAGCCTCTCTCTCAGGATAAGGACGTAATTGCCATCAAT
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Fabry's disease; Gaucher's disease; human; gene; ds.
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/product= "Human WT rGAL-8 protein"
/product= "Human WT rGAL-8 protein"
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88US-00160771.
88US-00219279.
89US-00310881.
89US-00347637.
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26-FEB-1988;
15-JUL-1988;
17-FEB-1989;
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08-JUN-1989;
22-OCT-1990;
16-JAN-1991;
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  enzymes in a plant expression system that can be used in enzyme
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                   The invention relates to human alpha-galactosidase derivatives and the nucleic acids encoding them. The polypeptides are used in a method for producing active recombinant human and animal lysosomal enzymes in a plant expression system. The enzymes of an be used in enzyme replacement therapy for the therapeutic treatment of human and animal lysosomal diseases. This sequence represents DNA encoding a human alpha-galactosidase derivative polypeptide of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          <u> ATGCAGCTGAGGAACCCAGAACTACATCTGGGCTGCGCGCTTGCGCTTCGCTTCCTGGCC</u>
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                                                                     Claim 1; SEQ ID NO 11; 77pp; English
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Best Local Similarity 100.
Matches 1266, Conservative
                              replacement therapy.
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lysosomal storage disease; Gaucher's disease; Niemann-Pick disease;
Fabry disease; Tay-Sachs disease; cardiovascular; nephrotrophic; human;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAGTACTGCAATCACTGGCGAAATTTTGCTGACATTGATGATTCCTGGAAAAGTATAAAG
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                                601 TCCTGTGAGTGGCCTCTTTATATATGTGGCCCTTTCAAAAGCCCCAATTATACAGAAATCCGA
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                                                                                                                                                                                                                                                                                                                The invention relates to nucleotide encoding galactosidase (GAL). The invention is useful in gene therapy. The polymucleotides and polypeptides are useful in treating human and animal lysosomal storage diseases, e.g. Fabry's disease and Gaucher's diseases. The present sequence is human GAL
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                                                                                                                                                                                                                                          numan and animal lysosomal Gaucher's diseases.
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Best Local Similarity 100.0%; Pred. No. 0;
Matches 1266; Conservative 0; Mismatches 0; Indels 0;
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Fabry's disease and
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29-DEC-1993; 93US-00176414.

19-JAN 1994; 94US-00184237.

14-OCT-1994; 94US-00324003.

21-MAY-1999; 99US-00316572.

26-JUL-2000; 2000US-00626127.

13-NOV-2001; 2001US-00993059.
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P-PSDB; ADJ88277.
                                                                                                  TURPEN T H. POGUE G P. ERWIN R L. GRILL L K.
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               GACTGGGGGGGTAGATCTGCTGATGGTTGTTACTGTGACAGTTTGGAAATTTG
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GCTAATTATGTTCACAGCAAAGGACTGAAGCTAGGGATTTATGCAGATGTTGGAAATAAA
                                                                               ACCTGCGCAGGCTTCCCTGGGAGTTTTGGATACTACGACATTGATGCCCCAGACCTTTGCT
                                                                                                                      GACTGGGGGAGTAGATCTGCTAAAATTTTGATGGTTGTTACTGTGACAGTTTGGAAAATTTTG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The present invention relates to novel galactosidase (Gal) proteins such as rGAL-12, rGAL-12R, r-GAL-25 or rGAL-25R. The methods and compositions of the present invention are useful for producing recombinant lysosomal enzymes for enzyme replacement therapy for treating human and animal lysosomal storage diseases sucher's adisease. Niemann-Pick disease, Rabry disease and Tay-Sachs disease. The present sequence is human wild type rGAL-8 DNA used in the exemplification of the invention.
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ive 0; Mismatches
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88US-00160771.
89US-0031081.
90US-0060244.
92US-00923692.
92US-00924733.
93US-00184237.
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POGUE G P.
ERWIN R L.
GRILL L K.
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P-PSDB; ADM48681.
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Matches 1266; Conserv
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21-MAY-1999;
26-JUL-2000;
13-NOV-2001;
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31-JUL-1992;
30-DEC-1992;
29-DEC-1993;
19-JAN-1994;
                              23-JUN-2003;
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26-FEB-1988;
17-FEB-1989;
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                                            Lysosomal enzyme; glucocerebrosidase; GCB; GCR; alpha-galactosidase;
enzyme replacement therapy; lysosomal storage disease; Gaucher's disea
Niemann-Pick disease; Fabry's disease; Tay-Sachs disease;
Hurler's syndrome; Hurler-Scheie syndrome; nephrotropic; human; gene;
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20-MAR-2002; 2002US-00103327.
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                                                                                                                                                                                                                                                                                Gauchers disease, metabolic, neurological disease, niemann pick disease, genetic disorder; Fabry disease, metabolic disorder; tay sachs disease, antilipemic; cns-gen.; lysosome storage disease, alpha-galactosidase; gene; ds.
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                                                                                                                                                                                                      Human, alpha-galactosidase, lysosomal enzyme; lysosomal storage disease;
therapeutic; rGAL-8R; gene; ds.
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Matches 1264; Conservative
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(TURP/) TURPEN T H.
(KUMA/) KUMAGAI M H.
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(TURP/) TURPEN T H.
(KUMA/) KUMAGAI M H.
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invention is useful in gene therapy. The polynuclectides and polypeptides are useful in treating human and animal lysosomal storage diseases, e.g. Fabry's disease and Gaucher's diseases. The present sequence is human GAL DNA.
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Best Local Similarity 100.0%; Pred. No. 0;
Matches 1264; Conservative 0; Mismatches
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1201 TCAAGGTTAAGAAGTCACATAAATCCCACAGGCACTGTTTTGCTTCAGCTAGAAAACACA 1260
           The invention relates to nucleotide encoding galactosidase (GAL). The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       New lysosomal enzymes, useful in treating human and animal lysosomal storage diseases, e.g. Fabry's disease and Gaucher's diseases.
                                                                                                                                                                                                                                                                                                                                disease;
                                                                                                                                                                                                                                                                                                                             Galactosidase, GAL; gene therapy; lysosomal storage Fabry's disease; Gaucher's disease; human; gene; ds.
                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
1. .1284
/*tag= a
/product= "Human WT rGAL-8R protein"
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26-FEB-1988; 88US-00160771.
17-FEB-1989; 88US-00310881.
05-MAY-1989; 89US-00310881.
05-MAY-1989; 89US-00310881.
22-OCT-1980; 89US-00363138.
22-OCT-1991; 91US-0060244.
16-JAN-1991; 91US-00614617.
31-JUL-1991; 91US-00931899.
01-AUG-1991; 92US-0093733.
29-DEC-1992; 92US-0093733.
29-DEC-1992; 92US-0093733.
29-DEC-1994; 94US-00186414.
19-JAN-1994; 94US-00186414.
19-JAN-1994; 94US-001865127.
26-JUL-2000; 2000US-00626127.
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P-PSDB; ADJ88279.
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POGUE G P.
ERWIN R L.
GRILL L K.
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The present invention relates to novel galactosidase (Gal) proteins such as rGAL-12, rGAL-12R, r-GAL-25 or rGAL-25R. The methods and compositions of the present invention are useful for producing recombinant lysosomal enzymes for enzyme replacement therapy for treating human and animal lysosomal storage diseases such as Gaucher's disease, Niemann-Pick disease, Fabry disease and Tay-Sachs disease. The present sequence is human wild type rGAL-8R DNA. This sequence comprises a human rGAL-8 DNA and Extention signal DNA. This sequence is used in the exemplification of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121 ACCATGGGCTGGCTGCACTGGGAGCGCTTCATGTGCAACCTTGACTGCCAGGAAGAGCCA 180
                                                                                New alpha-galactosidase polypeptides, useful in producing recombinant lysosomal enzymes for the treatment of lysosomal storage diseases, such as Gaucher's disease, Niemann-Pick disease, Fabry disease and Tay-Sachs
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                                                                                                                                                                                                                                                    TCAAGGTTAAGAAGTCACATAAATCCCACAGGCACTGTTTTGCTTCAGCTAGAAAACACA 1260
                                                                                                                                                                                                                                                                 Galactosidase, Gal, lysosomal enzyme; enzyme replacement therapy;
lysosomal storage disease; Gaucher's disease; Niemann-Pick disease;
Fabry disease; Tay-Sachs disease; cardiovascular; nephrotrophic; human;
                                        CGACACATCAGCCCTCAAGCCTCTCCTTCAGGATAAGGACGTAATTGCCATCAAT
                                                                                                GAACGACCTCTCTCAGGCTTAGCCTGGGCTGTAGCTATAAACCGGCAGGAGATTGGT
                                                                                                                                       GGACCTCGCTCTTATACCATCGCAGTTGCTTCCCTGGGTAAAGGAGTGGCCTGTAATCCT
                                                                                                                                                        GGACCTCGCTCTTATACCATCGCAGTTGCTTCCCTGGGTAAAGGAGTGGCCTGTAATCCT
                             CAGGACCCCTTGGGCAAGCAAGGTACCAGCTTAGACAGGGAGACAACTTTGAAGTGTGG
                                                                                 GAACGACCTCTCTCAGGCTTAGCCTGGGCTGTAGCTATGATAAACCGGCAGGAGATTGGT
                                                                                                                                                                                                                      GCCTGCTTCATCACACACTCCTCCTGTGAAAAGGAAGCTAGGGTTCTATGAATGGACT
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1. .1284
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88US-0016071.

89US-0031081.

90US-0060224.

92US-0093733.

92US-00176414.

94US-00176414.

94US-00176414.

99US-00176572.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human wild type rGAL-8R DNA
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KUMAGAI M H.
POGUE G P.
ERWIN R L.
GRILL L K.
                                                                                                                                                                                                                                                                                                                                                                                                          ADM48682 standard;
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26-JUL-2000;
13-NOV-2001;
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26-FEB-1988;
17-FEB-1989;
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31-JUL-1992;
30-DEC-1992;
29-DEC-1993;
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14-OCT-1994;
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99.8%; Score 1264; Dest Local Similarity 100.0%; Pred. No. 0; Matches 1264; Conservative 0; Mismatches
                                                                                                                                                                                                                                                         Disclosure; SEQ ID NO 13; 88pp; English
                                                                                                     Kumagai MH
                                                                                                                                                                                                                       diseases, such as Fabry's disease.
                                                                   (LARG-) LARGE SCALE BIOLOGY CORP.
26-JUL-2000; 2000US-00626127.
13-NOV-2001; 2001US-00993059.
20-MAR-2002; 2002US-00103327.
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   CAGTACTGCAATCACTGGCGAAATTTTGCTGACATTGATGATTCCTGGAAAAGTATAAAG
                       CAGTACTICCAATCACTIGGCGAAATTTTGCTGACATTGATGATTCCTGGAAAAGTATAAAG
                                                                                                     AGTATCTTGGACTGGACATCTTTTAACCAGGAGAGAATTGTTGATGTTGCTGGACCAGGG
                                                                                                                                                                         GGTTGGAATGACCCAGATATGTTAGTGATTGGCAACTTTGGCCTCAGCTGGAATCAGCAA
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421 ACCTGCGCAGGCTTCCCTGGGAGTTTTGGATACTACGACATTGATGCCCAGACCTTTGCT 480
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                                                                                                                                                                                                                                                                                                                                                                                                                                          New isolated polypeptides useful for producing lysosomal enzymes in plants to be utilized in enzyme replacement therapy or for the therapeutic treatment of human or animal lysosomal storage diseases,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 14; Length 1284;
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100.0%; Pred. No. 0;
ive 0; Mismatches
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                                                                                                                                                                                                                                                                                                                      Kumagai MH
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                                                                                                                                                                 26-JUL-2000; 2000US-00626127.
13-NOV-2001; 2001US-00993059.
20-MAR-2002; 2002US-00103327.
                                                                                                                      08-NOV-2004; 2004US-00984389
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Best Local Similarity 100.
Matches 1264; Conservative
                                                                                                                                                                                                                                                                                                                      Garger SJ, Turpen TH,
                                                                                                                                                                                                                                                                                                                                                                    2005-404004/41
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                                                                                                                                                                 CAGTACTGCAATCACTGGCGAAATTTTGCTGACATTGATGATTGTCCTGGAAAAGTATAAAG
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                    GCAGATGGTTATAAGCACATGTCCTTGGCCCTGAATAGGACTGGCAGAAGCATTGTGTAC
                                                                                                 AGTATCTTGGACTGGACATCTTTTAACCAGGAGAGAATTGTTGATGTTGCTGGACCAGGG
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                                                                  TCCTGTGAGTGGCCTCTTTATATGTGGCCCTTTTCAAAAGCCCAATTATACAGAAATCCGA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human alpha-galactosidase DNA, rGAL-8R, SEQ ID NO: 13.
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The invention relates to human alpha-galactosidase truncated at the carboxy terminus and the production of enzymatically active recombinant human and animal lysosomal enzymes. The invention is useful for producing lysosomal enzymes for treating lysosomal storage diseases, producing altered or mutated proteins, enzymatically active or otherwise, to serve as precursors or substrates for further in vivo or in vitro processing to a specialised industrial form for research or therapeutic uses, to produce more effective therapeutic enzyme, for producing antibodies against lysosomal enzymes for medical diagnostic use, and in any commercial process that involves substrate hydrolysis. The present
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                                                                  "Human rGAL-4 protein"
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                                                                                                                                                                                                                                                           Kumagai
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sequence is human rGAL-4 DNA
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Best Local Similarity 99.9%;
Matches 1264; Conservative
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                                                                                                                                                                                                                                                           Turpen TH,
                                                                                                                                                                                                   (GARG/) GARGER S J.
(TURP/) TURPEN T H.
(KUMA/) KUMAGAI M H.
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Human, alpha-galactosidase, rGAL-4; gene, ds; lysosomal enzyme replacement therapy; lysosomal disease.
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   GCTAATTATGTTCACAGCAAAGGACTGAAGCTAGGGATTTATGCAGATGTTGGAAATAAA
                                                         GACTGGGGAGTAGATCTGCTAAAATTTGATGGTTGTTACTGTGACAGTTTGGAAAATTTG
                                                                                                                               GACTGGGGAGTAGATCTGCTAAAATTTGATGGTTGTTACTGTGACAGTTTGGAAAATTTG
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New polynucleotide for producing active recombinant human and animal lysosomal enzymes in a plant expression system that can be used in enzyme The invention relates to human alpha-galactosidase derivatives and the nucleic acids encoding them. The polypeptides are used in a method for producing active recombinant human and animal lysosomal enzymes in a plant expression system. The enzymes can be used in enzyme replacement therapy for the therapeutic treatment of human and animal lysosomal diseases. This sequence represents DNA encoding a human alpha-galactosidase derivative polypeptide of the invention. CTCGTTTCCTGGGACATCCCTGGGCTAGAGCACTGGACAATGGATTGGCAAGGACGCCT 1 AFGCAGCTGAGGAACCCAGAACTACATCTGGGCTGCTGCGCTTCGCTTCCTGGCC CTCGTTTCCTGGGGACTCCCTGGGGCTAGAGCACTGGACAATGGATTGGCAAGGACGCCT 121 ACCATGGGCTGCACTGGAGGGCTTCATGTGCAACCTTGACTGCCAGGAAGAGCCA GATTCCTGCATCAGTGAGAAGCTCTTCATGGAGATGGCAGAGCTCATGGTCTCAGAAGGC 241 recanegarecaegriareacraccicrecarreacrerecrerecareacrecrececaaga GATTCAGAAGGCAGACTTCAGGCAGACCCTCAGGCGCTTTCCTCATGGGATTCGCCAGCTA 1 ATGCAGCTGAGGAACCCAGAACTACATCTGGGCTTGCGCGTTGCGCTTCGCTTCCTGGCC GATTCCTGCATCAGTGAGAAGCTCTTCATGGAGATGGCAGAGCTCATGGTCTCAGAAGGC GATTCAGAAGGCAGACTTCAGGCAGACCCTCAGGCGCTTTCCTCATGGGATTCGCCAGCTA Gaps Length 1278 ö Sequence 1278 BP; 325 A; 293 C; 333 G; 327 T; 0 U; 0 Other; 1; Indels DB 10;

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120 120 180 180 240 240 300

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The invention relates to nucleotide encoding galactosidase (GAL). The invention is useful in gene therapy. The polynucleotides and polypeptides are useful in treating human and animal lysosomal storage diseases, e.g. Fabry's disease and Gaucher's diseases. The present sequence is human GAL
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                 disease;
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               Galactosidase; GAL; gene therapy; lysosomal storage Fabry's disease; Gaucher's disease; human; gene; ds.
                                                                          Location/Qualifiers
1. .1278
/*tag= a
/product= "Human WT rGAL-4 protein"
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Pred. No. 0;
0; Mismatches
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                                                                                                                                              /note= "No start codon"
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15-JUJ-1988 | BUS-00160771

17-FEB-1989 | BUS-0031081.

05-MAY-1989 | BUS-00363138

22-OCT-1990 | 9US-00363138

22-OCT-1991 | 9US-0060244.

16-JAN-1991 | 9US-00737899.

31-JUJ-1992 | 9US-00737899.

31-JUJ-1992 | 9US-00737899.

31-JUJ-1992 | 9US-00737891.

31-JUJ-1992 | 9US-00997733.

30-DEC-1992 | 9US-00176444.

19-JAN-1994 | 9US-00176444.

19-JAN-1994 | 9US-00176444.

26-JUJ-2009 | 9US-0017644.

13-NOV-2001 | 2001US-00933059.
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Best Local Similarity 99.9%;
Matches 1264; Conservative
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Gaps

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181 GAT	GATTCCTGCATCAGTGAGAGCTCTTCATGGAGATGGCAGGCTCATGGTCTCAGAAGGC 240	Db ·	0
	9 9 9 9	300	ာမှု
361 GC 421 ACC 421 ACC 481 GAC 481 GAC 541 GC	GCTAATTATGTTCAGGCAAGGCAGGCTGAGGGTTTTTTGCAGGTGTTGTAAAAAAAA		
	900 900 960 960 102		
1021 GAV 1021 GAV 1081 GGJ 1081 GGJ 1141 GCC 11141 GCC 11201 TCC	GAACGACCTCTCTCAGGCTTAGCCTGGGGTGTAGATACGGGAGGAATTGGT 1080 GAACGACCTCTCTCAGGCTTAGCCTGGGGTGTAGATACGGGAGGAATTGGT 1080 GAACGACCTCTCTCTGGGGTTGGTTGCTTCCTGGGGTAAACGGGGAGATTGGT 1080 GGACCTCGCTCTTATACCATCGCAGTTGCTTCCTGGGGTAAAGGAGTGGCCTGTAATCCT 1140 GGACCTTGGTCTTATACCATCGGAGTTGCTTCCTGGGGTAAAGGAGTGGCCTGTAATCCT 1140 GGCCTCCTTCATCACCACACAGGTCCTCCTGGGAAAGGAAAGGAAAGGAGTCTATGAATCGT 1200 GCCTGCTTCATCACCACAGGCTCCTCCTGTGAAAGGAAAGGAAGG		

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Search completed: December 26, 2005, 05:23:09 Job time: 775 secs

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GenCore version 5.1.6

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OM nucleic - nucleic search, using sw model

Run on: December 26, 2005, 04:17:59; Search time 4817 Seconds

(without alignments)

12296.543 Million cell updates/sec

(without alignments)
12296.543 Million cell updates,
Title: US-10-602-219-11
Perfect score: 1266
Sequence: 1 atgcagctgaggaacccaga.....agctagaaaacacaatgtaa 1266

Sequence: 1 atgcagctgaggaacccaga.....agc|
Scoring table: IDENTITY_NUC

Scoring table: IDENTITY_NUC Gapop 10.0 , Gapext 1.0 Searched: 41078325 segs, 23393541228 residues

Total number of hits satisfying chosen parameters: Minimum DB seq length: 0 Maximum DB seq length: 200000000

82156650

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

EST: *

1: 9D est1: *

2: 9D est2: *

3: 9D est2: *

4: 9D htc: *

5: 9D est5: *

6: 9D est5: *

7: 9D est5: *

10: 9D est5: *

10: 9D est5: *

11: 9D est5: *

11: 9D est5: *

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

		dР				
Result No.	Score	Query Match	Query Match Length DB	DB	ID	Description
	1261.8	7.66	1277	4	CR605654	CR605654 full-leng
1 (2)	1258.4	99.4	1266	4	CR607242	CR607242 full-leng
m	1248	98.6	1253	4	CR617861	CR617861 full-leng
4	1169.8	92.4	1290	10	AY408540	AY408540 Homo sapi
ß	1149.4	90.8	1290	10	AY408541	AY408541 Pan trogl
ø	968.6	76.5	1086	н	AL554978	AL554978 AL554978
7	926.8	73.2	1014	Ŋ	BX354096	BX354096 BX354096
89	922.8	72.9	666	-	AL552630	AL552630 AL552630
σ	915.8	72.3	1067	m	BM564282	BM564282 AGENCOURT
c 10	915	72.3	1026	-	AL577581	AL577581 AL577581
11	899.8	71.1	1376	4	AK054547	AK054547 Mus muscu
12	839.8	71.1	2962	4	AK040081	AK040081 Mus muscu
c 13	890	70.3		<u>ر</u>	C0645672	CO645672 ILLUMIGEN
14	883.2	69.8	922	٦	C0645623	CO645623 ILLUMIGEN
c 15	880.8	9.69		-	AL575861	AL575861 AL575861
16	874.6	69.1		ო	BQ062192	BQ062192 AGENCOURT
17	870	68.7	984	7	C0646251	CO646251 ILLUMIGEN
18	862.4	68.1	920	7	CO645464	CO645464 ILLUMIGEN
19	856.4	67.6	923	7	CT005156	CT005156 CT005156
20	828.6	65.5	1296	10	AY408542	AY408542 Mus muscu
21	814.2	64.3	976	S	BQ956043	BQ956043 AGENCOURT
22	807.8	63.8	937	Ŋ	B0934640	BQ934640 AGENCOURT

BU540848 AGENCOURT	BU191867 AGENCOURT	BU154569 AGENCOURT	CA454083 AGENCOURT	BUS96617 AGENCOURT	BE622583 601440703	BX344841 BX344841	~	-	CA487415 AGENCOURT			CR983967 CR983967				BG824323 602727346		BG824387 602728627	-	BX374627 BX374627	CB529027 UI-H-FT2-	BI753664 603023559
BU540848	BU191867	BU154569	CA454083	BU596617	BE622583	BX344841	CA454143	BM450649	CA487415	CA487531	DR156332	CR983967	BE379425	BI224248	BQ225444	BG824323	CA488935	BG824387	BX344842	BX374627	CB529027	BI753664
322 5	398 5	388 5	352 6	301 5	327 2	313 5	371 6	325 3	928 6	349 6	8 96/	345 7	908 2	782 2	371 3	366 2	921 6	379 2	749 5	357 5	300	767 3
	62.8	61.9	61.8	60.7	60.5	60.4	60.1	59.8	59.4	59.1	59.0	59.0	59.0	58.7	58.6	58.6	58.5	58.2	57.6	57.5	56.4	55.2
79	794.	783.	78	768	765.	765.	761.	757.	752.	747.	7.	74	746.	742.	74	741.	741.2	737.	72	727.	713.	698.
23	24	25	56	27	28	53	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
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ALIGNMENTS

RESULT 1	
	CR605654 1277 bp mRNA linear HTC 21-JUL-2004
DEFINITION fu	full-length cDNA clone CSODBOOBYB11 of Neuroblastoma Cot 10-normalized of Homo sapiens (human).
ACCESSION CR	CR605654
	CR605654.1 GI:50486461
SO	TC; CNSLT_CDNA.
-	Homo sapiens (human)
ORGANISM HO	
E. Ma	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia: Eutheria: Euarchontoqlires; Primates; Catarrhini;
H	
REFERENCE 1	1 (bases 1 to 1277)
AUTHORS Li	Li, W.B., Gruber, C., Jessee, J. and Polayes, D.
	Full-length cDNA libraries and normalization
٠	Unpublished
REMARK CO	Contact : Feng Liang Email : fliang@lifetech.com URL :
± 1	http://tulllength.invitrogen.com/ invitrogen Corporation 1600
	Faraday Avenue
	2 (bases 1 to 1277)
SS	Genoscope.
	Direct Submission
JOURNAL SU	
BE	BP 191 91006 EVRY cedex - FRANCE (E-mail : segref@genoscope.cns.tr
	- Web : www.genoscope.cns.fr)
COMMENT 18	18t strand cDNA was primed with a NotI-oligo(dT) primer. Five prime
; .i.	nto the Not I and EcoR V sites of the DCMVSPORT 6 vector. Library
rom.	was normalized. Library was constructed by Life Technologies, a
di	division of Invitrogen.
FEATURES	Location/Qualifiers
sonrce	11277
	/organism="Homo sapiens"
	/ III _ CYPE= "III/NA"
	/dl xtel="reaching out"
	/tricing tyme="Noirth astoms Cot 10-norms ized"
	/plasmid="pcMVSPORT 6"
ORIGIN	
4.4.4.4	00 18 0100 1001 0 1001 1000

Query Match 99.7%; Score 1261.8; DB 4; Length 1277; Best Local Similarity 99.8%; Pred. No. 0; Matches 1263; Conservative 0; Mismatches 2; Indels 0; Gaps

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Direct Submission
Submitted (20-JUL-2004) Genoscope - Centre National de Sequencage :
BP 191 91006 BVRV cedex - FRANCE (E-mail : seqref@genoscope.cns.fr
- Web : www.genoscope.cns.fr)

1st strand cDNA was primed with a NotI-oligo(dT) primer. Five prime
end enriched, double-strand cDNA was digested with Not I and cloned
into the Not I and EcoR V sites of the pCMVSPORT 6 vector. Library
was normalized. Library was constructed by Life Technologies, a
division of Invitrogen.

Location/Qualifiers
                                                                                                                                                                                                                                                                                                           CR607242 12-JUL-2004 full-length cDNA clone CS0DI067YJ01 of Placenta Cot 25-normalized of Homos sapiens (human).
                                                                                                                       CTCGTTTCCTGGGACATCCCTGGGGCTAGAGCACTGGACAATGGATTGGCAAGGACGCCT 120
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Mammalia; Eutheria; Buarchontoglires; Primates; Catarrhini;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATGCAGCTGAGGAACCCAGAACTACATCTGGGCTGCGCGCTTGGCGTTCGCTTCCTGGCC
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GACCTCGCTCTTATACCATCGCAGTTGCTTCCCTGGGTAAAGAGAGTGGCCTGTAATCCT
                                                   GCCTGCTTCATCACACACACCTCCCTGTGAAAAGGAAGCTAGGGTTCTATGAATGGACT
                                                                     GCCTGCTTCATCACACACAGCTCCTCTGTGAAAAGGAAGCTAGGGTTCTATGAATGGACT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Contact: Feng Liang Email: fliang@lifetech.com URL:
http://fulllength.invitrogen.com/ InVitroGen Corporation 1600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ;
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/mol_type="mRNA"
/db_xref="taxon:9606"
/clone="CSOD1067YJ01"
/tissue type="Placenta Cot 25-normalized"
/plasmid="pCMVSPORT_6"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Hominidae, Homo.

1 (bases 1 to 1266)

Li, W. B., Gruber, C., Jessee, J. and Polayes, D.

Full-length cDNA libraries and normalization

Unpublished
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99.4%; Score 1258.4; 99.9%; Pred. No. 0;
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HTC; CNSLT CDNA.
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2 (bases 1 to 1266)
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Best Local Similarity 99.9
Matches 1259; Conservative
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VERSION
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AUTHORS
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JOURNAL
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                                                                         CTCGTTTCCTGGGACATCCCTGGGGCTAGAGCACTGGACAATGGATTGGCAAGGACGCCT
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98.6%; Score 1248; C
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1248; Conservative 0; Mismatches
                                                           CR617861.1 GI:50498668
HTC; CNSLT CDNA.
Homo sapiens (human)
Homo sapiens
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Submitted (20-JUL-2004) Genoscope - Centre National de Sequencage : Submitted (20-JUL-2004) Genoscope - Centre National de Sequencage : BP 191 9100 GENYX cedex - FRANCE (E-mail : seqref@genoscope.cns.fr | 1st strand cns.fr | 1st strand cDNA was primed with a NotI-oligo(dT) primer. Five prime end enriched, double-strand cDNA was digested with Not I and cloned into the Not I and EcoR V sites of the pCMVSPORT 6 vector. Library was normalized. Library was constructed by Life Technologies, a division of Invitrogen. CR617861 1253 bp mRNA linear HTC 21-JUL-2004 full-length cDNA clone CS0DK009YE12 of HeLa cells Cot 25-normalized of Homo sapiens (human). ö 360 CTCGTTTCCTGGGACATCCCTGGGGCTAGAGCACTGGACAATGGATTGGCAAGGACGCCT 120 125 121 ACCATGGGCTGGCTGCACTGGGAGCGCTTCATGTGCAACCTTGACTGCCAGGAAGAGCCA 180 185 240 245 TGGAAGGATGCAGGTTATGAGTACCTCTGCATTGATGACTGTTGGATGGCTCCCCAAAGA 300 305 365 420 65 Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi, Mammalia, Eutheria, Euarchontoglires, Primates, Catarrhini, ATGCAGCTGAGGAACCCAGAACTACATCTGGGCTGCGCGCTTGCGCTTCGCTTCCTGGCC GATTCCTGCATCAGTGAGAAGCTCTTCATGGAGATGGCAGAGCTCATGGTCTCAGAAGGC TGGAAGGATGCAGGTTATGAGTACCTCTGCATTGATGACGATGGCTCCCCCAAAGA CTCGTTTCCTGGGACATCCCTGGGGCTAGAGCACTGGACAATGGATTGGCAAGGACGCCT ACCATGGGCTGGCTGCACTGGGAGCGCTTCATGTGCAACCTTGACTGCCAGGAAGAGCCA GATTCCTGCATCATGAGAAGCTCTTCATGAGAGATGGCAGAGCTCATGGTCTCAGAAGGC GATTCAGAAGGCAGACTTCAGGCAGACCCTCAGCGCTTTCCTCATGGGATTCGCCAGCTA GATTCAGAAGGCAGACTTCAGGCAGACCCTCAGCGCTTTCCTCATGGGATTCGCCAGCTA Gapa Contact: Feng Liang Email: fliang@lifetech.com URL: http://fulllength.invitrogen.com/ InvitroGen Corporation 1600 ö Length 1253; 1. .1253 /organism="Homo sapiens" /mol_type="mRNA" /db_xref="taxon:9606" /clone="CSODK009YE12" /tissue type="HeLa cells Cot 25-normalized" /plasmid="pCMVSPORT_6" **ATGCAGCTGAGGAACCCAGAACTACATCTGGGCTGCGCGCTTGCGCTT** 0; Indels

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Inferring nonneutral evolution from human-chimp-mouse orthologous
                                                                                        Clark, A.G., Glanowski, S., Nielson, R., Thomas, P., Kejariwal, A., Clark, A.G., Glanowski, S., Nielson, R., Thomas, P., Kejariwal, A., Todd, M. A., Tanenbaum, D.M., Civello, D.R., Lu, F., Murphy, B., Ferriera, S., Wang, G., Zheng, X.H., White, T.J., Sninsky, J.J., Adams, M.D. and Cargill, M.
Direct Submitsation
Direct Submitted (16-NOV-2003) Celera Genomics, 45 West Gude Drive, Rockville, MD 20850, USA
This sequence was made by sequencing genomic exons and ordering them based on alignment.
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92.6%; Pred. No. 0;
iive 0; Mismatches
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/organism="Homo sapiens"
/mol_type="genomic DNA"
/db_xref="taxon:9606"
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TITLE Direct Submission JOURNAL Submitted (16-NOV-2003) Celera Genomics, 45 West Gude Drive, JOURNAL Submitted (16-NOV-2003) Celera Genomics, 45 West Gude Drive, Rockville, WD 20850, USA COMMENT This sequence was made by sequencing genomic exons and ordering them based on alignment. FEATURES Location/Qualifiers Organism="Pan troglodytes" 1. 1290	Query Match Query Match Query Match Query Match Best Local Similarity 91.1%; Pred. No. 0; Matches 1153; Conservative 0; Mismatches 112; Indels 0; Gaps 0; Qy 1 ATGAGCTGAGAACTACATCTGGGCTGCGCTTGGCTTCGCTTCTGGCCTCGCTTCTGGCCTTCTGGCTTCTGGCTTCTGGCTTCTGGCTTCTGGCTTCTGGCTTCTGGCTTCTGGCTTCTGGCTTCTGGCTTCTGGCTTCTGGCTTCTGGCTTCTGGCCTTGGCTTCTGGCTTCTGGCTTGCTTTCTTGGTGG	Db 61 CTCTTTCCTGGGACATCCCTTGGGCTAGAGCACTGGACAATGGCAAGGACGCCT 120 Qy 121 ACCATGGCCTGCACTGGAGCGCTTCATGTGCAATGGCTAGGAAGGA	241 TGGAAGGATGCAGGTTATGAGTACCTCTGCATTGATGACTGTTGGATGGCTCCCCAAAGA 301 GATTCAGAAGGCAGACTTCAGGCAGCCCTCAGCGCTTTCCTCATGGGATTGCCCCCCAAAGA 301 GATTCAGAAGGCAGACTTCAGGCAGACCCTCAGCGCTTTCCTCATGGGATTCGCAGCTA 361 GCTAATTATGTTCAGAGCTAGAGCTAGGGATTTATGCAGATGTTGGAAAAA 361 GCTAATTATGTTCACAGCAAAGGACTGAAGCTAGGGATTTATGCAGATGTTGGAAAAAA 361 NNNNNNNNGTTCACAGCAAAGGACTGAAGCTAGGGATTTATGCAGATGTTGGAAATAAA 361 NNNNNNNNNGTTCACAGCAAAAGGACTGAAGCTAGGGAATTTATGCAGATGTTGGAAATAAA	OY 421 ACCTGCGCAGGCTTCCCTGGAGTTTTGGATACTACGACATTGATGCCCAGACCTTTGCT 480	QY 601 TCCTGTGAGTGGCCTTTATATGTGGCCCTTTCAAAAGCCCAATTATACAGAAATCCGA 660 Db 601 NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNCCCAATTATACAGAAATCCGA 660 QY 661 CAGTACTGCAATCACTGGCGAAATTTTGCTGACATTGATGATATAAAG 720 Db 661 CAGTACTGCAATCACTGGCGAAATTTTGCTGACGTTGATGATAAAAG 720 QY 721 AGTATCTTGACTGCTGACTTTTAACCAGGAAATTCTTGATGATAAAAG 720 QY 721 AGTATCTTGAACTGGAATCTTTTAACCAGGAAATTGTTGATGTTGATGATAAAAG 780 Db 721 AGTATCTTGGACTGGACATCTTTTAACCAGGAAATTGTTGATGTTGATGATGAAGGA 780 QY 721 AGTATCTTGGACTGGACATCTTTTAACCAGGAAATTGTTGATGTTGATGTTGATGATGAGGAAAGTAAAAGTAAAAGTAAAAGTAAAAAA
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/clone_lib="Homo sapiens HELA CELLS COT 25-NORMALIZED" /note="lst strand cDNA was primed with a Not1-oligo(dT) primer. Five prime end enriched, double-strand cDNA was digested with Not I and cloned into the Not I and EcoR sites of the pCMVSPORT 6 vector. Library was normalized light conservative 98.0%; Pred. No. 8e-279; Best Local Similarity 98.0%; Pred. No. 8e-279; Archael Similarity 98.0%; Pred. No. 8e-279; Best Local Similarity 98.0%; Pred. No. 8e-279; Archael Similarity 98.0%; Pred. No. 8e-279; Ar	93 GATTCAGAAGCAGACTTCAGCGCGTTTCCTCATGGGATTCGCCACCA 364 91 GCTAATTGTTCACAGCAGACTCTCACCGGGATTTATGCAGATTCGCAATAAA 420 151 GCTAATTATGTTCACAGCAAGGACTTTAGATACTTTATGCAGATTTTGCAAATAAA 424 92 ACCTGCGCAGGCTTCCCTGGGAGTTTTGGATACTTAGATGCCCAGACTTTGCT 480 421 ACCTGCGCAGACTACTCCTCAAAGCTTTGGATACTTAGATGCCCAGACTTTGCT 481 481 GACTGGGGAAGAACTTTCGAAACTTTGAATACTAGACCCCAGACTTTGCT 481 482 ACCTGCGCAGACTACTCCTTAGATACTTGAATACTAGACCCCAGACTTTGCT 481 483 GACTGGGGAAGAACTTCTCTTAGATACTAGACACTTTGAAACTTTGAAAATTTG 540 484 GACTGGGGAAGAACTTCTTTAGATACTAGACACTTTGAAACTTTGAAAATTTG 540 60 CCTGTGGGGAATACTCTTTAAATTTGATGATTGTACACTTTTGAAAATTTG 540 60 TCCTGTGAATGCTTATAAATTTGATGCTGTATACAGAAACTTTGTAAA 60 TCCTGTGAATGCTTTAAAATTTGATGCTGAATACAGAAAATTTG 540 60 TCCTGTGAATGCTTTAAAATTTGATGCTGAATACAGAAAATTTGAAAATTTGAAAAATTTGAAAAATTTGAAAAACCCCAATTATAAAAAATTTGAAAAACTCAAAAACTCAAAAATTTGAAAAAACCCCAATTATAAAAAAATTTGAAAAAAAA
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Mammalia, Eutheria, Euarchontoglires, Primates, Catarrhini,
                                                           CAGGTTATGAGTACCTCTGCATTGACTGTTGGATGGCTCCCCAAAGAGAGATTCAGAAG
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                                                                                                              TTCACAGCAAAGGACTGAAGCTAGGGATTTATGCAGATGTTGGAAATAAAACCTGCGCAG
                                                                                                                                                                                                               TTCACAGCAAAAGAACTGAAGGATTTATGCAGATGTTGGAAATAAAACCTGCGCAG
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1 (bases 1 to 999)

11 (Annual Subber, C., Jessee, J. and Polayes, D.

Full-length cDNA libraries and normalization

Unpublished (2001)

On Feb 15, 2001 this sequence version replaced gi:31274445.
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TKGGCMAGCAAGGK 1000
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Contact: Genoscope
Genoscope - Centre National de Sequencage
Genoscope - Centre National de Sequencage
Email: seqref@genoscope.cns.fr, Web : www.genoscope.cns.fr
1st strand cDNA was primed with a NotI-oligo(dT) primer. Five prime
end enriched, double-strand cDNA was digested with Not I and cloned
into the Not I and EcoP V sites of the pCMVSPORT 6 vector. Library
was normalized. Library was constructed by Life Technologies, a
                                                                                                                                                                                                                                             BX354096

BX354096 Homo sapiens NEUROBLASTOWA COT 25-NORWALIZED Homo sapiens CDDA clone CSDC014YH04 5-PRIME, mRNA sequence.

BX354096.2 GI:46550107
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/tissue type="NEUROBLASTOMA COT 25-NORMALIZED"
/clone lib="Homo sapiens NEUROBLASTOWA COT 25-NORMALIZED"
/note="lst strand cDNA was primed with a NotI-oligo(dT)
primer. Five prime end enriched, double-strand cDNA was
digested with Not I and cloned into the Not I and EcoR V
sites of the pCMVSPORT 6 vector. Library was normalized."
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CCGACACATCAGCCCTCAAGCCAAAGCTCTTCAGGATAAAGGACGTWATTGCCATCAA 964
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                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalla; Eutheria; Euterchontoglires; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 1014)

1 (bases 1 to 2014)

1 Li, W.B., Gruber, C., Jessee, J. and Polayes, D.

Full-length cDNA libraries and normalization

Unpublished (2001)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      88 GGGACATCCCTGGGGCTAGAGCACTGGACAATGGATTGGCAAGGACGCCTACCATGGGCT
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Best Local Similarity 98.4%; Pred. No. 2.8e-266;
Matches 958; Conservative 8; Mismatches 5;
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/db_xref="taxon:9606"
                                                                                                                                    1023 GGAMGACTCTCTC 1035
                                                                                                              1020 GGAACGACCICIC 1032
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/u_xil="taxon:1900"
/clone=TMGE:5742198"
/tissue_type="medulla"
/tab_host="DHIDB"
/clone=lib="MIH MGC_119"
/clone=lib="MIH MGC_119"
/note="Organ: brain; Vector: pCMV-SPORT6; Site_1: NotI;
Site_2: BcoRV (destroyed); RNA source normal medulla from anonymous male age 27. Library is oligo-dT primed and directionally cloned (BcoRV site is destroyed upon cloning). Average insert size 1.3 kb, insert size range 0.9-3 kb. Library is normalized and enriched for full-length clones and was constructed by C. Gruber (Invitrogen). Research Genetics tracking code 013. Note: this is a NIH_MGC Library."
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_6560104 NIH_MGC_119 Homo sapiens cDNA clone IMAGE:5742198
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E I (bases 1 to 1067)

S NIH-MGC http://mgc.nci.nih.gov/.

National Institutes of Health, Mammalian Gene Collection (MGC)

L Unpublished (1999)

C Contact: Robert Strausberg, Ph.D.

Email: cgapbs-r@mail.nih.gov

Tissue Procurement: Life Technologies, Inc.

CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)

DNA Sequencing by: Agencourt Bioscience Corporation

Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LINL at:

http://image.llnl.gov

Plate: LLAM1279s row: p column: 07

High quality sequence stop: 761.
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Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini;
                                                                         CAGTACTGCAATCACTGGCGAAATTTTGCTGACATTGATGATTCCTGGAAAAGTATAAAAG
                                    CAGTACTGCAATCACTGGCGAAATTTTGCTGACATTGATGATTCCTGGAAAAGTATAAAG
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Contact: Genoscope
Genoscope - Centre National de Sequencage
2 rue Gaston Cremieux, CP 5706 - 91057 BVRY cedex - FRANCE
2 rue Gaston Cremieux, CP 5706 - 91057 BVRY cedex - FRANCE
Bmail: seqref@genoscope.cns.fr, Web : www.genoscope.cns.fr
1st strand cDNA was primed with a NotI-oligo(dT) primer. Five prime
end enriched, double-strand cDNA was digested with Not I and cloned
into the Not I and EcoR V sites of the pCMVSPORT 6 vector. Library
was normalized. Library was constructed by Life Technologies, a
division of Invitrogen. This sequence belongs to sequence cluster
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/mol_type="mRNA"
/db xref="teaxon:9606"
/clone="CSODI067YJU"
/tissue type="placenya COT 25-NORMALIZED"
/clone=list strand cDNA was primed with a NotI-oligo(dT)
primer. Five prime end enriched, double-strand cDNA was
digested with Not I and cloned into the Not I and ECOR V
sites of the pCMVSPORT 6 vector. Library was normalized."
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                                                     GCTGAGGAACCCAGAACTACATCTGGGCTGCGCGCTTGCGCTTCGCTTCCTGGCCCTCGT
                                                                                                 TTCCTGGGACATCCCTGGGGCTAGAGCACTGGACAATGGATTGGCAAGGACGCCTACCAT
                                                                                                                                              GGGCTGGCTGCACTGGGAGCGCTTCATGTGCAACCTTGACTGCCAGGAAGAGCCAGATTC
                                                                                                                                                                                          CTGCATCAGTGAGAAGCTCTTCATGGAGATGGCAGAGCTCATGGTCTCAGAAGGCTGGAA
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                                Gaps
                              7;
         1067;
          Length
                                Indels
        915.8; DB 3;
No. 5.7e-263;
smatches 31;
                              0; Mismatches
         Score
Pred. 1
        72.3%;
llarity 96.4%;
Conservative
                    Similarity
         Query Match
Best Local Simi
Matches 1009;
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Genoscope - Centre National de Sequencage
2 rue Gaston Cremieux, CP 5706 - 91057 ENRY cedex - FRANCE
Email: seqref@genoscope.cns.fr, Web : www.genoscope.cns.fr
1st strand cDNA was primed with a NotI-oligo(dT) primer. Five prime
end enriched, double-strand cDNA was digested with Not I and cloned
into the Not I and EcoR V sites of the pCMYSPORT & vector. Library
was normalized. Library was constructed by Life Technologies, a
division of Invitrogen. This sequence belongs to sequence cluster
                                                                                                                                                                        AL577581 Homo sapiens HELA CELLS COT 25-NORMALIZED Homo sapiens CDNA clone CSODK009YEL2 3-PRIME, mRNA sequence.
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/clone="lst strand cDNA was primed with a NotI-oligo(dT)
primer. Five prime end enriched, double-strand cDNA was
digested with Not I and cloned into the Not I and EcoR V
sites of the pCMVSPORT 6 vector. Library was normalized."
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Mammalia, Eutheria, Euarchontoglires, Primates, Catarrhini;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           For more information about this cluster, see http://www.genoscope.cns.fr/cdna?s=CSODK009BC06NP1&c=10506.r. Location/Qualifiers
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1 (bases 1 to 1026)

11,W.B., Gruber,C., Jessee,J. and Polayes,D.
Full-length CDMA libraries and normalization
Unpublished (2001)
On Feb 16, 2001 this sequence version replaced (Contact: Genoscope
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                       1058
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ACGNACTTCTCTCAGGCTTTAACCGGG
                                                                                                                                                                                                                                                                                                        AL577581.3 GI:46256603
                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens (human)
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G. (Dasas I to 113/4).

S. Adachi, J., Alzawa, K., Akimura, T., Arakawa, T., Bono, H., Carninci, P., Fukuda, S., Furuno, M., Hanagaki, T., Hara, A., Hashizume, W., Fukuda, S., Furuno, M., Hiranka, T., Hiraoka, T., Hirozane, T., Hayatsu, M., Hiraoka, T., Hirozane, T., Hori, F., Imotani, K., Ishi, Y., Itoh, M., Kagawa, I., Kasukawa, T., Kach, H., Kouda, M., Katoh, H., Kawai, J., Kojima, Y., Kondo, S., Konno, H., Kouda, M., Katoh, H., Kawai, J., Mutsuyama, T., Miyazaki, M., Mutsara, M., Nishi, K., Nomura, K., Numazaki, R., Ohno, M., Ohasto, N., Sano, H., Sasaki, D., Shibata, K., Shinagawa, A., Shiraki, T., Sazuo, Y., Tagami, M., Tagawa, A., Takahashi, F., Takau-Akahira, S., Takeda, Y., Tanaka, T., Tomaru, A., Toya, T., Yasunishi, A., Mutamission

Direct Submission

L. Submitted (16-JUL-2001) Yoshihide Hayashizaki, The Institute of Physical and Chemical Research Group, RIKEN Gonome Center (GSC), Kanagawa, 230-0045, Japan (E-mail:genome-resegge: riken:jp, WL:http://genome.gsc.riken:jp, Pax:81-45-503-9222,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /codon_start=1
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/clone_lib="RIKEN full-length enriched mouse_cDNA_library"
Shibata, K., Itoh, M., Aizawa, K., Nagaoka, S., Sasaki, N., Carninci, P., Stonno, H., Akiyama, J., Nishi, K., Kteunai, T., Tashiro, H., Itoh, M., Sumi, N., Ishi, Y., Nakamura, S., Hazama, M., Nishine, T., Harada, A., Yamamoto, R., Matsumoto, H., Sakaguchi, S., Ikegami, T., Kashiwagi, K., Yaliwake, S., Inoue, K., Togawa, Y., Izawa, M., Ohara, E., Matahiki, M., Yoneda, Y., Ishikawa, T., Ozawa, K., Tanaka, T., Matsuura, S., Kawai, J., Okazaki, Y., Muramatsu, M., Inoue, Y., Kira, A. and Hayashizaki, Y. SHEN integrated sequence analysis (RISA) system-384-format Genome Res. 10 (11), 1757-1771 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cDNA library was prepared and sequenced in Mouse Genome Encyclopedia Project of Genome Exploration Research Group in Riken Genomic Sciences Center and Genome Science Laboratory in RIKEN. Division of Experimental Animal Research in Riken contributed to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Group Phase I & II Team.
Analysis of the mouse transcriptome based on functional annotation 6 60,770 full-length CDNAs
Nature 420, 563-573 (2002)
6 (bases 1 to 1376)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The FANTOM Consortium and the RIKEN Genome Exploration Research

    1286
    Inote="unnamed protein product; galactosidase, alpha (MGD|MGI:1347344, GB|NM_013463, evidence: BLASTN, 99%, match=1373)

                                                                                                                                                                                                                                                                                                                                                                      The RIKEN Genome Exploration Research Group Phase II Team and
                                                                                                                                                                                                                                                                                                                                                                                                     FANTOM Consortium. Functional annotation of a full-length mouse cDNA collection Nature 409, 665-690 (2001)
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21. .1286
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|db_xref="taxon:10090"
|clone="E330039P08"
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/organism="Mus musculus"
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URL:http://fantom.gsc.riken.jp/
Location/Qualifiers
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HTC; CAP trapper.
HTC; CAP trapper.
Mus musculus (house mouse)
Mus musculus (starting trapper)
Mus musculus (hordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia;
Sciurognathi; Muridae; Murinae; Mus.
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                                                                     657 AGCAITGTGTACTCCTGTGAGTGGCCTCTTTATATGTGTGGCCCTTTCAAAAGCCCAATTAT
                                                                                                                                                                                           GCTGGACCAGGGGGTTGGAATGACCCAGATATGTTAGTGATTGCAACTTTGGCCTCAGC
                                      AGCATTGTGTACTCCTGTGAGTGGCCTCTTTATATGTGGCCCCTTTCAAAAGCCCAATTAT
                                                                                                                                                           ACAGAAATCCGACAGTACTGCAATCACTGGCGAAATTTTGCTGACATTGATGATTCCTGG
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High-efficiency full-length cDNA cloning
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AKO40081 2962 bp mRNA linear HTC 03-APR-2004 Mus musculus 0 day neonate thymus CDNA, RIKEN full-length enriched library, clone:A430057F16 product:galactosidase, alpha, full insert sequence.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Carninci, P., Shibata, Y., Hayatsu, N., Sugahara, Y., Shibata, K., Itoh, M., Konno, H., Okazaki, Y., Muramatsu, M. and Hayashizaki, Y. Normalization and subtraction of cap-trapper-selected CDNAs to prepare full-length CDNA libraries for rapid discovery of new Genome Res. 10 (10), 1617-1630 (2000)
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                                                                                                                                                       CAAGACCCCTTGGGCAAGCAGGCTACTGTTTCAGAAAGGAAAACCACATTGAGGTTTGG
                      GTGACACAGATGGCCCTCTGGGCTATCATGGCCGCTCCCCTACTCATGTCCAACGATCTG
                                                     CGACACATCAGCCCTCAAGCCTCTCCTTCAGGATAAGGACGTAATTGCCATCAAT
                                                                                 CGACAAATCAGCTCTCAAAGCTCTGCTTCAGAATAAGGATGTAATTGCCATCAAC
                                                                                                                                                                                                                  GAACGGCCACTCTCCAACCTAGCCTGGGCTGTGGCTGTGAGAAACCTGCAGGAGATTGGT
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                                                                                                                         CAGGACCCCTTGGGCAAGCAACGGTACCAGCTTAGACAGGGAGACAACTTTGAAGTGTGG
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Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia;
Sciurognathi; Muridae; Murinae; Mus.
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High-efficiency full-length cDNA cloning
Meth. Enzymol. 303, 19-44 (1999)
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HTC; CAP trapper.
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PIDQYYCHWRNPDDYDDSWESIKNILSWTVYYQKEIVVSVGSGWNDPDMLVIGNFG
LSWDQQYTQWALWAINAMAPLLMSNDHZOISSGAKALLQNKDVIAINQDPLGKQGYCRR
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Encyclopedia Project of Genome Exploration Research Group in Riken
Genomic Sciences Center and Genome Exploration Research Group in Riken
Division of Experimental Animal Research in Riken contributed to
prepare mouse tissues.
Please visit our web Site for further details.
URL:http://genome.gsc.riken.jp/.
URL:http://genome.gsc.riken.jp/.
URL:http://fantom.gsc.riken.jp/.

I. .2962
/ organism="Mus musculus"
/ mol Lrype="mkna"
/ strain="C57BL/64"
/ strain="C57BL/64"
/ db xref="FANTOM DB:A430057F16"
/ db xref="FANTOM DB:A430057F16"
/ db xref="Tantom"
/ db xref="Ta
Group Phase I & II Team.

Analysis of the mouse transcriptome based on functional annotation of 60,707 full-length cDNAs

Anature 420, 563-573 (2002)

B ( bases I to 2962)

S Adachi, J., Alzawa, K., Akimura, T., Haraka, T., Hashizume, W., Hangashida, K., Hayarau, M., Hanagaki, T., Haraoka, T., Hirozane, T., Hayashida, K., Hayarau, M., Hiramoto, K., Hiraoka, T., Hirozane, T., Hori, F., Imotani, K., Ishii, Y., Itoh, M., Kagawa, I., Kasukawa, T., Kathinara, C., Malma, Y., Kondo, S., Konno, H., Kawai, J., Kojima, Y., Kondo, S., Konno, H., Kawai, J., Kojima, Y., Numazaki, R., Ohno, M., Ohsato, N., Okaancaki, Y., Saito, R., Saitoh, H., Sakai, K., Sakazume, N., Sano, H., Sasaki, Y., Saito, R., Saito, R., Saitoh, H., Sakai, C., Sakai, K., Sakazume, N., Sano, H., Sasaki, D., Shibae, K., Shinagawa, A., Shiraki, T., Sasaki, T., Tanaka, T., Tomaru, A., Toya, T., Yasunishi, A., Muramatsu, M. and Hayashizaki, Y. Takahashi, Y., Direct Submission

Submitted (16-UUL-2011) Yoshinide Hayashizaki, The Institute of Submitted (16-UUL-2011) Yoshinide Hayashizaki, The Institute of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  / LTAIN ALT ON THE WANKILLSRDTRLVCELALCPLALVFWSILGVRALDNGLARTPTM
GWILHWERFMCNLLDCOREPDACTSEQLEYMCANEDAWNDGWRDAGYDXLCIDDGWMAPER
DSKGRLQADPORPPESDACTSEQLEYMCAITAWNSDGWRDAGYDXLCIDDGWMAPER
DSKGRLQADPORPPESDAGYSKWALALWRTGRSIVYSGEWPLYLRPPHKPNY
TDIQYYCNHWRNFDDDYYDSWESIKNILSWTVYQKEIVEVAGPGSWNDPMLYIGNFG
TSMOQUYQMALWAIMAAPELLMSNDLRGISSQARALLGNKDVIAINQDPLGKQGYCFR
KENHIEWWERPLSNLAMAYWANGBIGGPCPYTIQISSLGRGLACNBGCIITGLLPE
KVHLGFYEWTLLKTRVNPSGTVLFRLER"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Physical and Chemical Research (RIKEN), Laboratory for Genome Exploration Research Group, RIKEN Genomic Sciences Center (GSC), RIKEN Yokohama Institute; 1-7-22 Suehiro-cho, Tsurumi-ku, Yokohama, Kanagawa 230-0045, Japan (E-mail:genome-res@gsc.riken.jp, URL.http://genome-gsc.riken.jp/, Tel:81-45-503-9222, Fax:81-45-503-9216)
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Mismatches 222;
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82.3%; Pred. No. 5.6
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/proteIn_id="BAC30508.1"
/db_xref="G1:26333581"
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Best Local Similarity 82.3
Matches 1033; Conservative
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CCCTGTGAAAAGGAAGCTAGGGTTCTATGAATGGACTTCAAGGTTAAGAAGTCACATAAA 1223
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                                                                                                                                                                                                                                               741 GTTGGCCCTGAATAGGACTGGCAGAAGCATTGTGTTTTTCTCTGTGAGTGGCCTCTCTATAT 682
                                                                                                                                                                                                                                                                                                                               GTGGCCATTTCAAAAGCCCAATTACACAGAAATCCGACAGTACTGCAATCACTGGGGAAA 622
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Macaca mulatta
Bukaryota, Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Butheria; Evarchontoglires; Primates; Catarrhini;
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ILLUMIGEN MCQ 24642 Katze MMLV Macaca mulatta cDNA clone
IBIUW:23923 57 similar to Bases 5 to 920 highly similar to human
CQ645623 (CO645623.1 GI:50567117
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                   AATGAAAATAGGGATTTATGCAGACGTTGGAAATAAAACCTGCGCAGGCTTCCTTGGGAG
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                                                                                                                                         ATTTGATGGTTGTTACTGTGACAGTTTGGAAATTTGGCAGATGGTTATAAGCACATGTC
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1 (bases 1 to 1133)
Magness, C.L., Fellin, P.C., Thomas, M.J., Korth, M.J., Agy, M.B., Proll, S.C., Fitzgibbon, M., Scherer, C.A., Miner, D.G., Katze, M.G. and Padonato, S.P.
                                                                                                                                           EST 23-JUL-2004
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                                                                                                                                     CO645672
ILLUMIGEN MCQ 25513 Katze MMLV Macaca mulatta cDNA clone
IBIUW:23923 57 similar to Bases 27 to 1049 highly similar to human
GLA (Hs.69089), mRNA sequence.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Email: cmagness@illumigen.com
Sequenced on 2004.03.05. 699 Q20 bases. Library Preparation: Prof.
Michael Katze Lab at University of Washington DNA Sequencing:
Illumigen Blosstences Inc. For further information, see
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    384 ACTGAAGCTAGGGATTTATGCAGATGTTGGAAATAAAACCTGCGCAGGCTTCCCTGGGAG 443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /dev stage="adult"
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Site_2: BsrG I; Created from CloneMiner cDNA_Library
Construction kit (catalog #18249-029)"
1201 TCAAGGTTAAGAAGTCACATAAATCCCACAGGCACTGTTTTGCTTCAGCTAGAAA 1255
1207 TTGACCTTAAAAACTCCAGTAAACCCCTCAGGCACTGTTTTGTTTCGGTTAGAAA 1261
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Best Local Similarity 94.3%; Pred. No. 3.3e-255;
Matches 945; Conservative 0; Mismatches 55;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Contact: C. Magness
Illumigen Biosciences Inc.
2203 Airport Way S. Suite 450, Seattle,
Tel: 2063780400
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BACKWARD: CACTATAGGGCGAATTGGGTA
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/strain="Indian"
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                                                                                                                                                                                                                                                                                   Macaca mulatta (rhesus monkey)
Macaca mulatta
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                                                                                                                                                                                                                          CO645672
CO645672.1 GI:50567166
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PCR PRimers
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini; Hominidae; Homo.

Hominidae; Homo.

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AL575861
AL575861
AL575861.3 GI:46248771
AL575861.3 GI:46248771
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                                                     431 ACCTGCGCAGGCTTCCCTGGGAGTTTTGGATACTATGACATTGATGCCCAGACCTTTGCT
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                        ACCTGCGCAGGCTTCCCTGGGAGTTTTGGATACTACGACATTGATGCCCAGACCTTTGCT
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For more information about this cluster, see
http://www.genoscope.cns.fr/cdna?s=CSODI067CE0INP1&c=10506.r.
Location.Qualifiers
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/organism="Macaca mulatta"

/organism="Macaca mulatta"

/mol_type=mRNA"

/gtrain="Indian"

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/clone="IBIUW:23923"

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/lab_host="Electromax DH10B"

/clone lib="Katze MMLV"

/note="Organ: liver; Vector: pDONR 222; Site_1: BsrG I;

Site_2: BsrG i; Created from CloneMiner cDNA Library

Construction kit (catalog #18249-029)"
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                                                                                                                                                                                                                                                                                                                                     Fax: 2063780408

Baall: emagness@allumigen.com
Sequenced on 2004.03.02. 796 Q20 bases. Library Preparation: Prof.
Michael Katze Lab at University of Washington DNA Sequencing:
Hilumigen Bloschences Inc. For further information, see
http://www.macaque.org
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Cercopithecidae; Cercopithecinae; Macaca.
1 (bases 1 to 922)
Magness, C.L., Fellin, P.C., Thomas, M.J., Korth, M.J., Agy, M.B.,
Proll, S.C., Fitzgibbon, M., Scherer, C.A., Miner, D.G., Katze, M.G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTCGTTTCCTGGGACATCCCTGGGGCCAGAGCACTGGACAATGGCCAGGACGCT
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Best Local Similarity 98.0%; Pred. No. 3.3e-253;
Matches 894; Conservative 0; Mismatches 18;
                                                                                                                                                                                                                                               Illumigen Biosciences Inc.
2203 Airport Way S, Suite 450, Seattle,
Tel: 2063780400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FORWARD: CCCTCACTAAAGGGAACAAAA
BACKWARD: CACTATAGGGCGAATTGGGTA
Insert Length: 922 Std Brror: 0.00
Plate: CL000111 row: E column: 08
Seg primer: CCCTCACTAAAGGGAACAAAA
POLYA=No.
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Genome Biol. 6 (7), R60 (2005)
15998449
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                                                                                                                                                                                                                                       Contact: C. Magness
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/tissue_type="PLACENTA COT 25-NORWALIZED"
/clone_lib="Homo sapiens PLACENTA COT 25-NORWALIZED"
/note="lst strand cDNA was primed with a NotI-oligo(dT)
primer. Five prime end enriched, double-strand cDNA was
digested with Not I and cloned into the Not I and BCOR V
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Length 1266; Indels

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31	1212		1215	m	327	-
32	1185.8	•	1214	m	US-09-023-655-1001	Sequence 1001, Ap
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40	1168.8		1197	m	-921	25,
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42	1168.8	•	1197	٣	-759	25,
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; APPI	APPLICANT:	rurpen,	Thomas	Ξ		
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                                                        ACCTGCGCAGGCTTCCCCTGGGAGTTTTGGATACTACGACATTGATGCCCAGACCTTTGCT
                                                                  ACCIGCGCAGGCTTCCCTGGGAGTTTTGGATACTACGACATTGATGCCCCAGACCTTTGCT
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RESULT 2 US-10-103-327-11 ; Sequence 11, Application US/10103327

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APPLICANT: GARGER, Stephen A.
APPLICANT: TURPEN, Thomas H.
APPLICANT: TURPEN, Thomas H.
APPLICANT: KUMAGAI, Monto H.
TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN TITLE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION FILE REFERENCE: 008010087CPUS06; CURRENT APPLICATION NUMBER: US/09/993,059; PRIOR RILING DATE: 2002-03-20; PRIOR RILING DATE: 2001-11-13; NUMBER OF SEQ ID NOS: 37
SOFTWARE: FastsEQ for Windows Version 4.0 Z DB 3; ö Query Match
100.0%; Score 1266;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1266; Conservative 0; Mismatches TYPE: DNA ORGANISM: Homo sapiens ... (1266) 601 661 g ò

CAGTACTGCAATCACTGGCGAAATTTTGCTGACATTGATGATTCCTGGAAAAGTATAAAG	qa	AIGCAGCTGAGGAACCCAGAACTACATCTGGGCTGCGCGTTGCGCTTCGCTTCCTGGCC 60
721 AGTATCTTGGACTGGACATCTTTTAACCAGGAGAATTGTTGATGTTGCTGGACCAGGG 780 	ර් සි	61 CTCGTTTCCTGGGACTTCCCTGGGGCTAGA6CACTGGACATGGATTGGCAAGACGCCT 120
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841 GTAACTCAGATGGCCCTCTGGGCTATCATGGCTGCTCTTTATTCATGTCTAATGACCTC 900	<i>ò</i> ₽	181 GATTCCTGCATCAGAGAAGCTCTTCATGGAGATGGCAGAGCTCATGGTCTCAGAAGGC 240
901 CGACACATCAGCCCTCAAGCCAAAGCTCTCCTTCAGGATAAGGACGTAATTGCCATCAAT 960 	ò a	241 TGGAAGGATGCAGGTTATGAGTACCTCTGCATTGATGACTGTTGGATGGCTCCCCAAAGA 300
961 CAGGACCCTTGGGCAAGCAAGGATACCAGCTTAGACAGGAGACAACTTTGAAGTGTGG 1020 	& g	301 GATTCAGAAGGCAGACTTCAGGCAGACCCTCAGCGCTTTCCTCATGGGATTCGCCAGCTA 360
1021 GAACGACCTCTCTCAGGCTTAGCCTGGGGTGTAGCTATGATAAACCGGCAGGAGATTGGT 1080 	è 8	361 GCTAATTATGTTCACAGCAAAGGACTGAAGGATTTATGCAGATGTTGGAAATAAA 420
1081 GGACCTCGCTCTTATACCATCGCAGTTGCTTCCCTGGGTAAAGAGTGGCCTGTAATCCT 1140 	ò a	421 ACCTGCGCAGGCTTCCCTGGGAGTTTTGGATACTACGACATTGATGCCCAGACCTTTGCT 480
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1201 TCAAGGTTAAGAAGTCACATAAATCCCACAGGCACTGTTTTGCTTCAGCTAGAAAACACA 1260 	<i>ò</i> 8	541 GCAGATGGTTATAAGCACATGTCCTTGGCCCTGAATAGGACTGGCAGAAGCATTGTGTAC 600
1261 ATGTAA 1266 1261 ATGTAA 1266	ò a	601 TCCTGTGAGGCCTCTTTATATGGCCCTTTCAAAAGCCCAATTATACAGAAATCCGA 660
RESULT 3 US-09-993-059-13	& €	661 CAGTACTGCAATCACTGGCGAAATTTTGCTGACATTGATGATTCCTGGAAAGTATAAAG 720
sequence 13, Application US/USY3JUSY ; Patent No. 6897696 ; GENERAL INFORMATION: ; APPLICANT: GENERR, Stephen A.	<i>≿</i> 8	721 AGTATCTIGGACIGGACATCTTITAACCAGAGAATTGITGATGATGCTGGACCAGGG 780
APPLICANT: TUKEGA, TROMBA H. TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN TITLE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION	& a	781 GGTTGGAATGACCCAGATATGTTAGTGATTGGCAACTTTGGCCTCAGCTGGAATCAGCAA 840
FILE REFERENCE: U0801008/CPUSUS CURRENT FILING DATE: 2001-11-13 NUMBER OF SEQ ID NOS: 37	<i>&</i> ₽	841 GTAACTCAGATGGCCCTCTGGGCTATCATGCTGCTCCTTTATTCATGTCTAATGACCTC 900
SOFTWARE: FastSEQ for Windows Version 4.0 SEQ ID NO 13 LENGTH: 1284 TYPE: DNA	강 名	901 CGACACATCAGCCCTCAAGCTCTCCTTCAGGATAAGGACGTAATTGCCATCAAT 960
ORGANISM: Homo sapiens FEATURE: NAME/KEY: CDS LOCATION: (1) (1284)	& a	961 CAGGACCCTTGGGCAAGGAAGGGTACCAGCTTAGACAGGGAGACAACTTTGAAGTGTGG 1020
Query Match Query Match Best Local Similarity 100 0%; Pred. No. 0; Administry 0; October 10; October 1	<i>∂</i> 8	1021 GAACGACCTCTCTCAGGCTTAGCCTGGGCTGTAGGTATGATAAACCGGCAGGAGATTGGT 1080
AGAACCCAAACTACATCTGGGCTGCGCCTTGGCCTTCGTGGCC 60	<i>&</i> 8	1081 GGACCTCGCTCTTATACCATCGCAGTTGCTTCCCTGGGTAAAGGAGTGGCCTGTAATCCT 1140

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Patent No. 6897696;
GENERAL INFORMATION:
APPLICANT: GARGER, Stephen A.
APPLICANT: TURPEN, Thomas H.
APPLICANT: KURAGAI, Monto H.
TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN
TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN
TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN
CURRENT APPLICATION NUMBER: US/09/993,059;
CURRENT PILING DATE: 2001-11-13
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                           GCCTGCTTCATCACACACCCCCCTGTGAAAAGGAAGCTAGGGTTCTATGAATGGACT
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                                                                                                                                                                                                                                                                                                                                            Sequence 13, Application US/10103327

Patent No. 6890748

GENERAL INFORMATION:
APPLICANT: TUREN, Stephen A.
APPLICANT: TUREN, Thomas H.
APPLICANT: TUREN, THOREN, THOMASH, MONTO H.
TITLE OF INVENITON: PRODUCTION OF LYSOSOMAL ENZYMES IN TITLE OF INVENITON: PRODUCTION OF CURRENT APPLICATION PRODUCTION OF CURRENT APPLICATION NUMBER: US/10/103,327

CURRENT APPLICATION NUMBER: US/09/993,059

PRIOR APPLICATION NUMBER: US/09/993,059

PRIOR FILING DATE: 2001-11-13

NUMBER OF SEQ ID NOS: 37

SOFTWARE: FastSEQ for Windows Version 4.0

SEQ ID NO 13

LENGTH: 1284

TYPE: DNA
ORGANISM: Homo sapiens

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Best Local Similarity 100.0%; Pred. No. 0;
Matches 1264; Conservative 0; Mismatches
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; LOCATION: (1)...(1284)
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841 GTAACTCAGATGGCCCTCTGGGCTATCATGGCTGCTCCTTTATTCATGTCTAATGACCTC
                                             901 CGACACATCAGCCCTCAAAGCTCTCCTTCAGGATAAGGACGTAATTGCCATCAAT
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                            CGACACATCAGCCCTCAAGCCTCTCCTTCAGGATAAGGACGTAATTGCCATCAAT
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; Sequence 7, Application US/10103327
; Patent No. 6890748
; GENERAL INFORMATION:
    APPLICANT: GARGER, Stephen A.
    APPLICANT: TUREN, Thomas H.
    TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN TITLE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION FILE REFERENCE: 008010087CPUS06
    CURRENT FILING DATE: 2002-03-20
    PRIOR APPLICATION NUMBER: US/09/993,059
    PRIOR PILING DATE: 2001-11-13
    NUMBER OF SEQ ID NOS: 37
    SOFTWARE: FastSEQ for Windows Version 4.0
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Pred. No. 0;
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Matches 1264; Conservative
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; LOCATION: (1)...(1275)
US-10-103-327-7
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; Pred. No. 0;
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Best Local Similarity 99.9%;
Matches 1264; Conservative
NUMBER OF SEQ ID NOS: 37
SOFTWARE: FastSEQ for Windows
SEQ ID NO 7
                                                         TYPE: DNA
ORGANISM: Homo sapiens
                                                                                      ; FEATURE:
; NAME/KEY: CDS
; LOCATION: (1)...(1275)
US-09-993-059-7
                                             LENGTH: 1278
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US-09-993-059-3

is Sequence 3, Application US/09993059

is Patent No. 6887696

is GENERAL INFORMATION:

is APPLICANT: GENERR. Stephen A.

is APPLICANT: TURPEN, Thomas H.

is APPLICANT: TURPEN, Monto H.

is TITLE OF INVENTION: PRODUCTION OF LYSOSOWAL ENZYMES IN

ITILE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION

if TITLE REFERENCE: 008010097CFUS06

is CURRENT APPLICATION NUMBER: US/09/993,059

is CURRENT FILING DATE: 2001-11-13

is NUMBER OF SEQ ID NOS: 377

is SEQ ID NO 3

is SEQ ID NO 3
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99.9%; Pred. No. 0;
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Best Local Similarity 99.9
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; Patent No. 6890748
; GENERAL INFORMATION:
; GENERAL INFORMATION:
; APPLICANT: GARGER, Stephen A.
; APPLICANT: TURBEN, Thomas H.
; TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN
; TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN
; TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN
; TITLE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION
; TITLE OF INVENTION: PLANTS BY 1000000
; TITLE OF INVENTION NUMBER: US/10/103,327
; CURRENT FILING DATE: 2001-11-13
; PRIOR PILING DATE: 2001-11-13
; NUMBER OF SEO ID NOS: 37
; SOFTWARE: FASTSEO for Windows Version 4.0
; SEO ID NO 3. 37
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CRGANISM: Homo sapiens
FRATURE:
NAME/KEY: CDS
LOCATION: (1)...(1290)
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Oy 1021 GAACGACCTCTCTCAGGCTTAGCCTGGGCTGTAGCTATGATAAACCGGCAGGAGATTGGT 1080 Db 1021 GAACGACCTCTCTCAGGCTTAGCCTGGGCTGTAGTAAACCGGCAGGAGATTGGT 1080 Oy 1081 GGACCTCGCTCTTATACCATCGCAGTTGCTTCCCTGGGTAAAGGAGTGGCCTGTAATCCT 1140 Db 1081 GGACCTCGCTCTTATACCATCGCAGTTGCTTCCCTGGGTAAAGGAGTGGCCTGTAATCCT 1140 Oy 1141 GCCTGCTTCATCACCAGGTTGCTTCCCTGGGGTAAAGGAAGG	1201 TCAAGGTTAAGAAGTCACATAAATCCCACAGGCACTGTTTGCTTCAGCTAGAAAACACA 126 1201 TCAAGGTTAAGAAGTCACATAAATCCCACAGGCACTGTTTTGCTTCAGCTAGAAAAACACA 126 1201 TCAAGGTTAAGAAGTCACATAAATCCCACAGGCACTGTTTTGCTTCAGCTAGAAAACACA 126 1261 ATGTA 1265	SULT 9 209-993-059-9 SULT 9 209-993-059-9 Sequence 9, Applic	GENERAL INFORMATION: APPLICANT: TUREBE, Stephen A. APPLICANT: TUREBE, Thomas H. APPLICANT: TUREBE, Thomas H. TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN TITLE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION FILE REPERENCE: 008010087CPUSO6 CURRENT APPLICATION NUMBER: US/09/993,059 CURRENT FILING DATE: 2001-11-13	; NUMBER OF SEQ ID NOS: 37 ; SOFTWARE: FastSEQ for Windows Version 4.0 ; SEQ ID NO 9 ; LENGTH: 1296 ; TYEE: DNA ; ORGANISM: Homo sapiens ; FEATURE: ; NAME/KEY: CDS ; LOCATION: (1)(1296) US-09-993-059-9	Query Match 99.8%; Score 1263.4; DB 3; Length 1296; Best Local Similarity 99.9%; Pred. No. 0; Matches 1264; Conservative 0; Mismatches 1; Indels 0; Gaps 0; Qy 1 ATGCAGCTGAGGAACTACATCTGGGCTGCGCTTGCGCTTCTGGCTCTGGC 60	Qy 61 CTCGTTTCCTGGGGCATCCTGGGCATGGACAATGGATTGGCAAGGACGCCT 120 Db [1	Qy 241 TGGAAGGATGCAGGTTATGAGTACCTCTGCATTGATGACTGGATGGCTCCCCAAGA 300 Db 241 TGGAAGGATGCAGGTATGATGATTGATGATGGTTGGATGGCTCCCCAAGA 300 Qy 301 GATTCAGAAGGAGTTCAGGGAGACCTCAGGGCTTTCCTCATGGGATTGCCAGCTA 360 Db 301 GATTCAGAAGGAGTTCAGGGAGACCTCAGGGCTTTCCTCATGGGATTGCCAGCTA 360 Db 301 GATTCAGAAGGCAGACTTCAGGCAGACCCTCAGGGCTTTCCTCATGGGATTCGCCAGCTA 360

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US-09-993-059-5

i Sequence 5, Application US/09993059

patent No. 6887696

GENERAL INFORMATION:
APPLICANT: GARGER, Stephen A.
APPLICANT: TURREN, Thomas H.
TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN TITLE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION FILE REFERENCE: 008010087CPUS06
CURRENT PILING DATE: 2001-11-13
NUMBER OF SEQ ID NOS: 37
SOFTWARE: FREESE 2001-11-13
SEQ ID NOS: 37
LENGTH: 1308
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ORGANISM: Homo sapiens
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TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN TITLE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION: PLIE REFERENCE: 008010087CPUSO6; CURRENT APPLICATION NUMBER: US/10/103,327 CURRENT FILING DATE: 2002-03-20; PRIOR PLICATION NUMBER: US/09/993,059; PRIOR PLICATION NUMBER: US/09/993,059; NUMBER OF SEQ ID NOS: 37; SOFTWARE: PSELSEQ for Windows Version 4.0; SEQ ID NO 9; SEQ ID 
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Best Local Similarity 99.9
Matches 1264; Conservative
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Sequence 5, Application US/10103327

Patent No. 6890748

GENERAL INFORMATION:
APPLICANT: GARGER, Stephen A.
TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN TITLE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION FILE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION CURRENT FILING DATE: 2002-03-20

PRIOR APPLICATION NUMBER: US/10/103,327

CURRENT FILING DATE: 2002-03-20

PRIOR APPLICATION NUMBER: US/09/993,059

PRIOR APPLICATION NUMBER: US/09/993,059

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Matches 1264; Conservative
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COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOCTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATE:
APPLICATION NUMBER: US/08/928,881
FILING DATE:
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Fraser, Janis K.
REGISTRATION NUMBER: 34,819
REFERENCE/DOCKET NUMBER: 07236/003001
TELEPHONE: 617/642-8070
TELEPHONE: 617/642-8076
INFORMATION FOR SED ID NO: 18:
SEQUENCE CHARACTERISTICS:
LENGTH: 1343 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
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US-08-928-881-18
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US-08-928-881-18
i Sequence 18, Application US/08928881
j Patent No. 6083725
j GENERAL INFORMATION:
i APPLICANT: Selden et al., Richard F.
TITLE OF INVENTION: DEFICIENCY
i NUMBER OF SEQUENCES: 28
CORRESPONDENES:
ADDRESSE: Fish & Richardson
STREET: 225 Franklin Street
COUNTY: Boston
STATE: MA
COUNTRY: USA

COMPUTER READABLE FORM:
HEDIUM TYPE: Floppy disk
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07236/003001
                                                                                                                                                                                                                                                                  99.7%; Score 1261.8;
99.8%; Pred. No. 0;
live 0; Mismatches
                                                                                                                            ;
TYPE: nucleic acid
;
STRANDEDNESS: single
;
TOPOLOGY: linear
;
SEQUENCE DESCRIPTION: SEQ ID NO: 18:
US-09-543-921-18
  REFERENCE/DOCKET NUMBER:
TELECOMMUNICATION INFORMATION:
                                TELEPRAN: 617/542-5070
TELEPRAN: 617/542-8906
INFORMATION FOR SEQ ID NO: 18:
SEQUENCE CHARACTERISTICS:
LENGTH: 1343 base pairs
                                                                                                                                                                                                                                                                Query Match
Best Local Similarity 99.8
Matches 1263; Conservative
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US-09-543-921-18
; Sequence 18, Application US/09543921
; Patent No. 6395884
; GENERAL INFORMATION:
; APPLICANT: Selden et al., Richard F.
; TITLE OF INVENTION: THERAPY FOR ALPHA-GALACTOSIDASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER REALABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC Compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/09/543,921
FILING DATE: 06-Apr-2000
CLASSIFICATION: cUnknown>
PRIOR APPLICATION DATA:
APPLICATION DATA:
APPLICATION NUMBER: 08/928,881
FILING DATE: cUnknown>
ATTORNEY/ABTT INFORMATION:
NAME: Fraser, Janis K.
REGISTRATION NUMBER: 34,819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CORRESPONDENCE ADDRESS:
ADDRESSER: Fish & Richardson
STREET: 225 Franklin Street
CITY: Boston
STATE: MA
COUNTRY: USA
ZIP: 02110-2804
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Oy 841 GTAACTCAGATGGCCTCTGGGCTATCATGGCTGCTTTATTCATGTCTAATGACCTC 900 Db 876 GTAACTCAGATGGCCTCTGGGCTATCATGGCTGCTTTATTCATGTCTAATGACCTC 915 Oy 901 CGACACATCAGCCCTCAAGCCAAAGCTCTCCTTCAGGATAAGGACGTAATTGCCATCAAT 960 Db 936 CGACACATCAGCCAAAGCTCTCCTTCAGGATAAGGACGTAATTGCCATCAAT 995 Oy 961 CAGGACCCCTTGGGCAAGCGAACCGCTTAGACAGGACACATTGAAGTGGTG 1020 Db 996 CAGGACCCCTTGGGCAAGGAACCAGCTTAGACAGGAACAACTTTGAAGTGTGG 1020 Db 1021 GAACGCCTTCAGGCAAGGAAGGCTGTAGCTATGATGATTAGAACCGCCAGGAAATTGGT 1080 Db 1026 GAACCTCTCTCAGGCTTAGCCTATGATTGATGATTGATTG	GGACCTCGCTCTTATACCATCGCAGTTGCTTCCCTGGGTAAAGGAGTGGCCTGTAATCCT	Db 1236	US-09-266-014-3 ; Sequence 3, Application US/09266014 ; Patent No. 6458574 ; GENERAL INFORMATION: ; APPLICANT: Selden, Richard F ; APPLICANT: Borowski, Marianne ; APPLICANT: Kinoshita, Carol M	APPLICANT: Williams, Melanie D APPLICANT: Schuetz, Thomas J APPLICANT: Schuetz, Thomas J APPLICANT: Schuetz, Thomas J APPLICANT: Baniel, Peter F. TILE OF INVENTION: Treatment for alpha-Galactosidase A Deficiency FILE REFERENCE: FABRY DISEASE (18082-001) CURRENT PEPLICATION NUMBER: US/09/266,014 CURRENT PELLNG DATE: 1999-03-11 PRIOR PILING DATE: 1996-09-13	PRIOR APPLICATION NUMBER: 08/928,881 PRIOR FILING DATE: 1997-09-12 PRIOR PILING DATE: 1997-09-12 NUMBER OF SEQ ID NOS: 24 SEQ ID NO 3 LENGTH: 1343 TYPE: DN AMAREM DATE: 1343	0.5.03-266-014-3 99.7%; Score 1261.8; DB 3; Length 1343; Query Match 99.7%; Pred. No. 0; Best Local Similarity 99.8%; Pred. No. 0; Matches 1263; Conservative 0; Mismatches 2; Indels 0; Gaps 0; Qy 1 ATGCAGCTGAGGAACCCAGAACTACATCTGGGCTGGGCGCTTGGCTTGGCTTCGGCTTCTGGCCTTCTGGCC 60

Search completed: December 26, 2005, 08:34:32 Job time: 268 secs

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GenCore version 5.1.6
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- nucleic search, using sw model OM nucleic

December 26, 2005, 07:09:39; Search time 1004 Seconds (without alignments) 10427.323 Million cell updates/sec Run on:

US-10-602-219-11 1266

1 atgcagctgaggaacccaga......agctagaaaacacaatgtaa 1266 Title: Perfect score: Sequence:

Scoring table:

IDENTITY NUC Gapop 10.0 , Gapext 1.0

9793542 segs, 4134689005 residues

Searched:

19587084 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database

Published Applications NA Main:*

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9: /cgn2_6/ptodata/1/pubpna/USO3B_PUBCOMB.seq:*
10: /cgn2_6/ptodata/1/pubpna/USO3B_PUBCOMB.seq:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

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Score	1266	1266	1266	1266	1266	1266	1264	1264	1264	1264	1264	1264	1263.4	1263.4	1263.4	1263.4	1263.4	1263.4	1263.4	1263.4	1263.4	1263.4	1263.4
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26 3, Appli 26 9, Appli 26 9, Appli 26 9, Appli 26 9, Appli 26 5, Appli 26 5, Appli 26 5, Appli 26 67, Appli
sydnence sequence seq
US-10-984-389-3 US-09-993-059-9 US-10-602-219-9 US-10-602-219-9 US-10-851-388-9 US-10-984-389-9 US-10-993-059-5 US-10-103-219-5 US-10-602-219-5 US-10-602-219-5 US-10-81-388-5 US-10-81-388-5 US-10-811-03-67 US-10-411-049-67 US-10-411-049-67 US-10-410-997-67 US-10-410-997-67 US-10-410-997-67 US-10-410-997-67 US-10-410-913-67
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ALIGNMENTS

JLT 1	US-09-993-059-11	Sequence 11, Application US/09993059	Publication No. US20020088024A1	GENERAL INFORMATION:	APPLICANT: GARGER, Stephen A.	APPLICANT: TURPEN, Thomas H.	APPLICANT: KUMAGAI, Monto H.	TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN	TITLE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION	FILE REFERENCE: 008010087CPUS06	CURRENT APPLICATION NUMBER: US/09/993,059	CURRENT FILING DATE: 2001-11-13	NUMBER OF SEQ ID NOS: 37	SOFTWARE: FastSEQ for Windows Version 4.0	SEQ ID NO 11	LENGTH: 1266	TYPE: DNA	ORGANISM: Homo sapiens	FEATURE:	NAME/KEY: CDS	LOCATION: (1)(1266)	US-09-993-059-11
RESULT 1	US-09-99	; Seguenc	, Publica	; GENERAI	; APPLIC	; APPLIC	; APPLIC	; TITLE	; TITLE	; FILE F	; CURRE	; CURREN	; NUMBER	; SOFTW	; SEQ ID	; LENGJ	TYPE	ORGAN	FEAT	; NAME/	; LOCAT	OS-09-99

Gaps ö Length 1266; Indele DB 3; ö 100.0%; Score 1266; Similarity 100.0%; Pred. No. 0; 56; Conservative 0; Mismatches Query Match Best Local Simil Matches 1266; C

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; Sequence 11, Application US/10103327
; Publication No. US20030106095A1
; GENERAL INFORMATION:
APPLICANT: TURPEN, Stephen A.
APPLICANT: TURPEN, Thomas H.
TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN
CURRENT PEPLICATION NUMBER: US/10/103,327
; CURRENT FILING DATE: 2002-03-20
; PRIOR APPLICATION NUMBER: US/09/993,059
; PRIOR FILING DATE: 2001-11-13
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tive 0; Mismatches
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SOFTWARE: FastSEQ for Windows Version
SEQ ID NO 11
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Matches 1266; Conservative
                                                                                                                                                                                                                                                                                          TYPE: DNA ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                       ; NAME/KEY: CDS
; LOCATION: (1)...(1266)
US-10-103-327-11
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                                    GCTAATTATGTTCACAGCAAAGGACTGAAGCTAGGGATTTATGCAGATGTTGGAAATAAA
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PRIOR FILING DATE: 1992-07-31
PRIOR APPLICATION NUMBER: 07/600,244
PRIOR FILING DATE: 1990-10-22
PRIOR APPLICATION NUMBER: 07/641,617
PRIOR FILING DATE: 1991-01-16
Remaining Prior Application data removed - See File Wrapper or PALM.
NUMBER OF SEQ ID NOS: 32
SOFTWARE: PatentIn version 3.2
SEQ ID NO 11
LENGTH: 1266
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APPLICANT: Turpen, Thomas H.
APPLICANT: Degue, Gregory P.
APPLICANT: Brwin, Robert L.
APPLICANT: Brwin, Robert L.
APPLICANT: Brwin, Robert L.
APPLICANT: Brwin, Robert L.
APPLICANT: Grill, Laurence K.
ITTLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN PLANTS BY TRANIENT EXPRESSION
FILE REFERENCE: LSBC-0087-CP09B
CURRENT APPLICATION NUMBER: 09/993,059
FRIOR APPLICATION NUMBER: 09/993,059
FRIOR APPLICATION NUMBER: 09/993,059
FRIOR PILING DATE: 2000-07-26
FRIOR APPLICATION NUMBER: 09/316,572
FRIOR PILING DATE: 1999-05-21
FRIOR PILING DATE: 1999-12-30
FRIOR PILING DATE: 1999-12-29
FRIOR PILING DATE: 1993-12-29
FRIOR PILING DATE: 1993-12-29
FRIOR PILING DATE: 1993-12-29
FRIOR PILING DATE: 1994-01-19
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Publication No. US20040016021A1
GENERAL INFORMATION:
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; TYPE: DNA
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UGS-10-602-220-11

Sequence 11, Application US/1060220

PUBLication No. US20040023281A1

GENERAL INPORMATION:

APPLICANT: LARGE Scale Biology Corporation

APPLICANT: Turge Scale Biology Corporation

APPLICANT: Turge Scale Biology Corporation

APPLICANT: Turge Scale Biology Corporation

APPLICANT: Poque, Gregory P.

APPLICANT: Poque, Gregory P.

APPLICANT: Found: Robert L.

APPLICANT: Poque, Gregory P.

APPLICANT: Grill, Laurence K.

ITLE OF INTENTION: RRODUCTION OF LYSOSOWAL ENZYMES IN PLANTS BY TRANIEN

FILE REPERBENCE: LESBC-0097-CP07B

CURRENT PELLING DATE: 2003-06-23

PRIOR PILING DATE: 2003-06-23

PRIOR PELLING DATE: 1999-50-21

PRIOR PELLING DATE: 1999-50-21

PRIOR PELLING DATE: 1999-50-21

PRIOR PELLING DATE: 1999-10-14

PRIOR PELLING DATE: 1991-10-14

PRIOR PELLING DATE: 1991-10-15

PRIOR PELLING DATE: 1991-10-16

PRIOR PELLING DATE
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US-10-851-388-11
Sequence 11, Application US/10851388
Publication No. US20040234516A1
Publication No. US20040234516A1
Publication No. US20040234516A1
SERRAL INFORMATION:
APPLICANT: GARGER, Stephen A.
APPLICANT: TURPEN, Thomas H.
TITLE OF INVENTION: PRODUCTION OF INVESTION PLANTS BY TRANSIENT EXPRESSION
TITLE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION
FILE REFERENCE: 008010087CPUSO6
CURRENT APPLICATION NUMBER: US/10/851,388
CURRENT PILLING DATE: 2004-05-21
PRIOR FILING DATE: 2001-11-13
NUMBER OF SEQ ID NOS: 377
SOFTWARE: FastSEQ for Windows Version 4.0
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llarity 100.0%; Pred. No. 0;
Conservative 0; Mismatches
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ORGANISM: Homo sapiens
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; NAME/KEY: CDS
; LOCATION: (1)...(1266)
US-10-851-388-11
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Publication No. US20020088024A1

GENERAL INFORMATION

APPLICANT: GARGER, Stephen A.

APPLICANT: GURGER, Thomas H.

APPLICANT: KUMAGAI, Monto H.

ITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN

ITLE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION

ITLE REPERENCE: 008010087CPUS06

CURRENT FILING DATE: 2001-11-13

NUMBER OF SEQ ID NOS: 37

SOFTWARE: FastSEQ for Windows Version 4.0

SEQ ID NO 13

LENGTH: 1284
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99.8%; Score 1264; D
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1264; Conservative 0; Mismatches
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ORGANISM: Homo sapiens
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NAME/KEY: CDS
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Sequence 11, Application US/10984389;
Publication No. US20050125859A1
GENERAL INFORMATION:
APPLICANT: GARGER, Stephen A.
APPLICANT: TURBEN, Thomas H.
APPLICANT: TURBEN, THOMAS H.
TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN TITLE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION; FILE REFERENCE: 008010087CPUS06; CURRENT APPLICATION NUMBER: US/10/984,389; CURRENT FILING DATE: 2001-11-08
FRIOR APPLICATION NUMBER: US/09/993,059
FRIOR FILING DATE: 2001-11-13
NUMBER OF SEQ ID NOS: 37
SOFTWARE: FASESEQ for Windows Version 4.0
SEQ ID NO 11
LENGTH: 1266
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100.0%; Score 1266;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1266; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                         TYPE: DNA
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                      ; NAME/KEY: CDS
; LOCATION: (1)...(1266)
US-10-984-389-11
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100.0%; Pred. No. 0;
live 0; Mismatches
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CURRENT APPLICATION NUMBER: US/10/602,23;
PRIOR APPLICATION NUMBER: 09/993,059
PRIOR PILLING DATE: 2003-06-23
PRIOR PILLING DATE: 2001-11-13
PRIOR PILLING DATE: 2000-07-26
PRIOR APPLICATION NUMBER: 09/916,127
PRIOR PILLING DATE: 1999-05-21
PRIOR FILLING DATE: 1999-05-21
PRIOR PILLING DATE: 1999-10-14
PRIOR FILLING DATE: 1994-10-14
PRIOR FILLING DATE: 1994-10-14
PRIOR FILLING DATE: 1994-10-19
PRIOR FILLING DATE: 1994-01-19
PRIOR FILLING DATE: 1992-12-30
PRIOR PILLING DATE: 1992-12-30
PRIOR PILLING DATE: 1992-07-31
PRIOR APPLICATION NUMBER: 08/184,237
PRIOR APPLICATION NUMBER: 07/923,692
PRIOR APPLICATION NUMBER: 07/923,692
PRIOR PILLING DATE: 1992-07-31
PRIOR PILLING DATE: 1992-07-31
PRIOR PILLING DATE: 1990-10-25
PRIOR FILLING DATE: 1991-01-16
PRIOR FILLING DATE: 1991-01-16
PRIOR FILLING DATE: 1991-01-15
PRIOR PILLING DATE: 1991-01-15
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PRIOR PILLING DATE: 1990-01-15
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Best Local Similarity 100.
Matches 1264; Conservative
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US-10-602-219-13
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Publication No. US20040016021A1
GENERAL INFORMATION:
APPLICANT: Large Scale Biology Corporation
APPLICANT: Turpen, Thomas H.
APPLICANT: Pogue, Gregory P.
APPLICANT: Erwin, Robert L.
APPLICANT: Brain, Robert E.
APPLICANT: Trunch Grill, Laurence K.
TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN PLANTS IF THE REFERENCE: LSBC-0087-CP09B
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| Publication No. US20040234516A1
| GENERAL INFORMATION: US20040234516A1
| APPLICANT: TURPEN, Stephen A. APPLICANT: TURPEN, Thomas H. APPLICANT: KUMAGAI, Monto H. TITLE OF INVENTION: PRODUCTION OF LYSOSOWAL ENZYMES IN TITLE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION: FILE REPERENCE: 008010987CPUG06
| CURRENT APPLICATION NUMBER: US/10/991,059
| PRIOR FILING DATE: 2004-05-21
| PRIOR FILING DATE: 2001-11-13
| NUMBER OF SEQ ID NOS: 377
| SOFTWARE: FastSEQ for Windows Version 4.0
| SEQ ID NO 13
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Publication No. US20020088024A1
GENERAL INFORMATION:
APPLICANT: GARGER, Stephen A.
APPLICANT: TURPEN, Thomas H.
APPLICANT: KUMAGAI, Monto H.
TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN
TITLE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION
FILE REPERENCE: 008010087CPUS06
CURRENT APPLICATION NUMBER: US/09/993,059
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| Publication No. US20050125859A1
| GENERAL INFORMATION: OS 1020050125859A1
| APPLICANT: GARGER, Stephen A. APPLICANT: GARGER, Stephen A. APPLICANT: TURPEN, Thomas H. APPLICANT: KUMAGH! MONCO H. UYSOSOMAL ENZYMES IN TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN TITLE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION FILLE REFERENCE: 008010087020806
| CURRENT APPLICATION NUMBER: US/10/984,389
| CURRENT FILING DATE: 2004-11-08
| PRIOR FILING DATE: 2001-11-13
| NUMBER OF SEQ ID NOS: 37
| SOFTWARE: PASLSEQ for Windows Version 4.0
| SEQ ID NO 13
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ORGANISM: Homo sapiens
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US-10-984-389-13
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; Bequence 7. Application US/10103327
; Publication No. US20030106095A1
; GENERAL INFORMATION:
; APPLICANT: GARGER, Stephen A.
; APPLICANT: TURPEN, Thomas H.
; TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN
; TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL EXPRESSION
; TITLE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION
; TITLE OF INVENTION: 2002-03-20
; PRIOR APPLICATION NUMBER: US/09/993,059
; RUMBER OF SEQ ID NOS: 37
; SOFTWARE: FARESEQ for Windows Version 4.0
; SEQ ID NO 7
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99.9%; Pred. No. 0;
iive 0; Mismatches
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Best Local Similarity 99.9
Matches 1264; Conservative
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ORGANISM: Homo sapiens
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US-10-103-327-7
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                                                                                                                                                                                                                     Score 1263.4;
Pred. No. 0;
0; Mismatches
 CURRENT FILING DATE: 2001-11-13
NUMBER OF SEQ ID NOS: 37
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 7
LENGTH: 1278
                                                                                                                                                                                                                     Query Match
Best Local Similarity 99.9%;
Matches 1264; Conservative
                                                                                         TYPE: DNA
ORGANISM: Homo sapiens
FEATURE:
NAME/KEY: CDS
                                                                                                                                                                  ; LOCATION: (1)...(1275)
US-09-993-059-7
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                                                                                                                                                                                    GENERAL INVERMATION:
APPLICANT: Large Scale Biology Corporation
APPLICANT: Turpen, Thomas H.
APPLICANT: Purpen, Thomas H.
APPLICANT: Purpen, Thomas H.
APPLICANT: Erwin, Robert L.
TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN PLANTS BY TRANIENT FILE REFERENCE: LSBC-003-CP03B
CURRENT FILING DATE: 2001-6-23
PRIOR PRIDK APPLICATION NUMBER: 09/993,059
PRIOR PRIDK APPLICATION NUMBER: 09/626,127
PRIOR APPLICATION NUMBER: 09/626,127
PRIOR PRILING DATE: 2000-07-26
PRIOR FILING DATE: 1999-05-21
PRIOR FILING DATE: 1999-10-14
PRIOR FILING DATE: 1999-10-14
PRIOR PRILING DATE: 1999-10-14
PRIOR PRILING DATE: 1993-12-29
PRIOR PRILING DATE: 1993-12-29
PRIOR PRILING DATE: 1993-12-29
PRIOR FILING DATE: 1993-12-39
PRIOR FILING DATE: 1993-01-19
PRIOR FILING DATE: 1991-01-16
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Pred. No. 0;
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                                                                                                                                  Sequence 7, Application US/10602219; Publication No. US20040016021A1; GENERAL INFORMATION:
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Best Local Similarity 99.9'
Matches 1264; Conservative
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; ORGANISM: Homo sapiens
US-10-602-219-7
1261 ATGTA 1265
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                  GATTCCTGCATCAGTGAGAAGCTCTTCATGGAGATGGCAGAGCTCATGGTCTCAGAAGGC
                                                                                               TGGAAGGATGCAGGTTATGAGTACCTCTGCATTGATGACTGTTGGATGGCTCCCCAAAGA
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Search completed: December 26, 2005, 10:52:07 Job time : 1008 secs

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(c) 1993 - 2005 Compugen Ltd.
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1 atgcagctgaggaacccaga......agctagaaacacaatgtaa 1266 US-10-602-219-11 1266 Title: Perfect score: Sequence:

Scoring table:

4168288 segs, 259477437 residues IDENTITY_NUC Gapop 10.0 , Gapext 1.0 Searched:

Total number of hits satisfying chosen parameters:

8336576

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries Minimum DB seq length: 0 Maximum DB seq length: 2000000000

Published Applications NA New:*

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3: /cgn2_6/ptodata/1/pubpna/US06_NEW_PUB.seq:*

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9: /cgn2_6/ptodata/1/pubpna/US11_NEW_PUB.seq:*

9: /cgn2_6/ptodata/1/pubpna/US11_NEW_PUB.seq:*

10: /cgn2_6/ptodata/1/pubpna/US06_NEW_PUB.seq:* Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

	Description	Sequence 40681, A	Sequence 42255, A	Seguence 13204, A	Sequence 55363, A	Sequence 43877, A	Sequence 149, App	68, 7	23,	69	5385	Sequence 13246, A	Sequence 29504, A		ĕ	Sequence 3, Appli	Sequence 13286, A	12,	Sequence 75, Appl	371	Sequence 28311, A	Sequence 61883, A	Sequence 37071, A	Sequence 3, Appli
	ΠD	US-10-750-185-40681	US-10-750-185-42255	US-10-995-561-13204	US-10-750-185-55363	US-10-750-185-43877	US-10-821-234-149	US-11-121-086-68	US-11-112-908-23	US-11-121-086-69	US-10-750-185-53897	US-10-995-561-13246	US-10-750-185-29504	US-10-995-561-29100	US-10-750-185-60280	US-10-841-129-3	US-10-995-561-13286	US-11-121-086-12	US-11-121-086-75	US-10-750-185-37196	US-10-750-185-28311	US-10-750-185-61883	US-10-750-185-37071	US-11-121-086-3
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Sequence 64685, A Sequence 121, App Sequence 13193, A Sequence 13493, A Sequence 60, Appl Sequence 1327, Appl Sequence 1327, Appl Sequence 1327, A Sequence 29504, A Sequence 39504, A Sequence 5, Appli Sequence 6, Appli Sequence 5, Appli Sequence 6, Appli Sequence 13, Appli Sequence 13, Appli Sequence 14, Appli Sequence 13, Appli Sequence 13, Appli Sequence 14, Appli Sequence 13, Appli Sequence 14, Appli Sequence 14, Appli Sequence 14, Appli Sequence 11, Appli
US-10-750-185-64685 US-10-131-826A-121 US-10-131-826A-121 US-10-750-185-54302 US-10-750-185-54302 US-10-750-185-42925 US-11-121-086-66 US-11-121-086-66 US-11-121-086-185-39400 US-11-121-086-185-39400 US-11-121-086-185-39400 US-11-121-086-185-39400 US-10-750-185-39271 US-10-750-185-3602 US-10-750-185-3602 US-10-750-185-3602 US-10-750-185-3602 US-10-509-921-2 US-10-509-921-2 US-10-509-921-2 US-10-509-921-14
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ALIGNMENTS

Sequence 40681, Application US/10750185
; Sequence 40681, Application US/10750185
; Publication No. US20050260603A1
; GENERAL INFORMATION:
; APPLICANT: MAI GENOMICS, INC.
; APPLICANT: KERR, Richard
; APPLICANT: ROSENFELD, David
; APPLICANT: BATES, Stephen
; APPLICANT: BATES, Stephen
; APPLICANT: BATES, Stephen
; APPLICANT: BATES, Stephen
; APPLICANT: FORMIN, Dennis
; TITLE OF INVENTION: COMPOSITIONS FOR INFERRING BOVINE TRAITS
FILE REFERENCE: MM11100-2
; CURRENT FILING DATE: 2003-12-31
; PRIOR APPLICATION NUMBER: US 60/437,482
; PRIOR FILING DATE: 2002-12-31 Length 2779; 2.9%; Score 37; DB 6; Length 277; 52.2%; Pred. No. 0.082; tive 0; Mismatches 75; Indels ; ORGANISM: Bovine 19866880781246 US-10-750-185-40681 NUMBER OF SEQ ID NOS: 64922 SOFTWARE: PatentIN version 3.1 SEQ ID NO 40681 LENGTH: 2779 Query Match Best Local Similarity 52.24 Matches 82, Conservative US-10-750-185-40681/c TYPE: DNA

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RESULT 2 US-10-750-185-42255 ; Sequence 42255, Application US/10750185

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APPLICANT: MAI GENOMICS, INC.
APPLICANT: DeNISE, Sue K.
APPLICANT: DENISE, Sue K.
APPLICANT: ROSENFELD, David
APPLICANT: HOLM, Tom
APPLICANT: BATES, Stephen
APPLICANT: FANTIN, Dennis
TILLE OF INVENTION: COMPOSITIONS FOR INFERRING BOVINE TRAITS
FILE REFERENCE: MAILIO-2
CURRENT APPLICATION NUMBER: US/10/750,185
CURRENT APPLICATION NUMBER: US 60/437,482
PRIOR FILING DATE: 2002-12-31
PRIOR FILING DATE: 2002-12-31
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APPLICANT: ROSENFELD, David
APPLICANT: HOLM, Tom
APPLICANT: BATES, Stephen
APPLICANT: BATES, Stephen
APPLICANT: FANTIN, Dennis
FITLE OF INVENTION: COMPOSITIONS FOR INFERRING BOVINE TRAITS
FILE REPERENCE: MAILIOU-2
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CURRENT FILING DATE: 2003-12-31
PRIOR APPLICATION NUMBER: US 60/437,482
PRIOR FILING DATE: 2002-12-31
NUMBER OF SEQ ID NOS: 64922
SOFTWARE: PatentIN version 3.1
LENGTH: 1437
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; Sequence 43877, Application US/10750185
; Publication No. US20050260603A1
; GENERAL INFORMATION:
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US-10-750-185-55363
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SOFTWARE: Patentin version 3.1
SEQ ID NO 55363
LENGTH: 1932
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APPLICANT: DENISE, Sue K.
APPLICANT: KERR, Richard
APPLICANT: ROSENFELD, David
                                                                                                                                                                                                                                                                  US-10-750-185-55363/c
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US-10-750-185-43877
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; LOCATION: (1)...(321019)
; OTHER INFORMATION: n = A,T,C or G, or insertion/deletion polymorphism (see Tables 1-)
US-10-995-561-13204
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Sequence 13204, Application US/10995561
Sequence 13204, Application US/10995561
Sequence 13204, Application No. US20050272054A1
Sequence 13204, Application No. US20050272054A1
GENERAL INFORMATION
TITLE OF INVENTION: GENETIC POLYMORPHISMS ASSOCIATED WITH
TITLE OF INVENTION: CARDIOVASCUAR DISORDERS AND DRUG RESPONSE, METHODS OF FILE REPERBENCE: CL001559
FILE REPERBENCE: CL001559
CURRENT APPLICATION NUMBER: US/10/995,561
CURRENT PILING DATE: 2004-11-24
NUMBER OF SEQ ID NOS: 85702
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 13204
LENGTH: 321019
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                                            APPLICANT: MNI GENOMICS, INC.
APPLICANT: MNI GENOMICS, INC.
APPLICANT: MNI GENOMICS, INC.
APPLICANT: RERE, Richard
APPLICANT: ROSENFELD, David
APPLICANT: ROSENFELD, David
APPLICANT: BATES, Stephen
APPLICANT: BATES, Stephen
APPLICANT: BATES, Stephen
APPLICANT: PATINTN, Dennis
TITLE OF INVENTION: COMPOSITIONS FOR INFERRING BOVINE TRAITS
FILE REFERENCE: MMI1100-2
CURRENT APPLICATION NUMBER: US 60/437,482
PRIOR APPLICATION NUMBER: US 60/437,482
PRIOR APPLICATION UMBER: US 60/437,482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 2.9%; Score 36.6; DB 6; Length 1306; Best Local Similarity 53.1%; Pred. No. 0.067; Matches 78; Conservative 0; Mismatches 69; Indels 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 35; DB 6; Length 321019; Pred. No. 11; 2; Mismatches 87; Indels 0
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      , TYPE: DNA
, ORGANISM: Bovine 19866880955804
US-10-750-185-42255
                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQ ID NOS: 64922
SOFWRARE: Patentin version 3.1
SEQ ID NO 42255
LENGTH: 1306
     Publication No. US20050260603A1
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ORGANISM: Homo sapiens
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LOCATION: (1)...(32101)
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TYPE: DNA
ORGANISM: Homo sapiens
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US-11-121-086-69
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| Sequence 149, Application US/10821234
| Sequence 149, Application US/10821234
| Publication No. US20050255114A1
| GENERAL INFORMATION:
| APPLICANT: Labat, Ivan
| APPLICANT: Stache-Crain, Birgit
| APPLICANT: Andarmani, Susan
| APPLICANT: Andarmani, Susan
| APPLICANT: Tang, Y. Tom
| TITLE OF INVENTION: Methods for Diagnosis and Treatment of Preeclampsia
| FILE REFERENCE: 821A
| CURRENT APPLICATION NUMBER: US/10/821,234
| CURRENT FILING DATE: 2004-04-07
| PRIOR PILING DATE: 2003-04-07
| PRIOR PILING DATE: 2003-04-07
| NUMBER OF SEQ ID NOS: 1704
| SOFTWARE: pt_SEQ_genes Version 1.0
| TOWARD: 16-66
                                                                                                   835 CAGCAAGTAACTCAGATGGCCCTCTGGGCTATCATGGCTGCTCTTTATTCATGTCTAAT 894
                                                                                                                                               458 CAGGAATTTATTGGGTTGGCTGACTGGGATATCCAGGGAGGAGGTGGCCTCAGGAATTCA 399
                                                                                                                                                                                                                                              398 gagcccagagccrrcrgccrcrcrcrcrcrcrccgrgracragargrcrrrgga 339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 156 CAACCTTGACTGCCAGGAAGAGCCAGATTCCTGCATCAGTGAGAAGCTCTTCATGGAGAT 215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               238 CAGTCTTGCCTCCCTGGAATACTCCGATTACTCCAAATGTAAAAAGATCATGATTGAGAG 297
                                                                                                                                                                                                895 GACCTCCGACACATCAGCCCTCAAGCCCAAAGCTCTTCAGGATAAGGACGTAATTGCC 954
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; Sequence 68, Application US/11121086
; Sequence 68, Application US/11121086
; Publication No. US20850266459A1
; GENERAL INFORMATION:
; APPLICANT: POULSEN, TIM S.
; TITLE OF INVENTION: NUCLEIC ACID PROBES AND NUCLEIC ACID ANALOG PROBES
; TITLE OF INVENTION: NUCLEIC CACID PROBES AND NUCLEIC ACID ANALOG PROBES
; FILE REFRENCE: 09138.6000-00000
; CURRENT TILING DATE: 2006-05-04
; PRIOR APPLICATION NUMBER: 60/567,570
; PRIOR FILING DATE: 2004-05-04
; NUMBER OF SEQ ID NOS: 107
; SOFTWARE: Patentin version 3.3
; SEQ ID NO 68
; LENGTH: 14656
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Query Match 2.6%; Score 33; DB 6; Length 1437; Best Local Similarity 53.5%; Pred. No. 1.3; Matches 69; Conservative 0; Mismatches 60; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             tch 2.6%; Score 32.8; DB 6; Length 1 sal Similarity 64.5%; Pred. No. 1.6; 49; Conservative 0; Mismatches 27; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              298 AGGAGAGCTTTTTCTC 313
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CORGANISM: Homo sapiens
US-11-121-086-68
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ORGANISM: Homo sapiens
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Best Local Similarity
Matches 49; Conserv
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                                                                                             644 ATTATACAGAAATCCGACAGTACTGCAATCACTGGCGAAATTTTGCTGACATTGATGATT
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APPLICANT: POULSEN, KIRSTEN V.
TITLE OF INVENTION: UNCLEIC ACID PROBES AND NUCLEIC ACID ANALOG PROBES
FILE REFERENCE: 09138.6000-00000
CURRENT APPLICATION NUMBER: US/11/121,086
CURRENT PILING DATE: 2005-05-04
PRIOR APPLICATION NUMBER: 60/567,570
PRIOR FILING DATE: 2004-05-04
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Length 146656;
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                                              42; Indels
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    DB 7;
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US-11-112-908-23/C

Sequence 23, Application US/11112908

Publication No. US20050260659A1

GENERAL INFORMATION:

APPLICANT: BATIS, Cole

APPLICANT: Davis, Lisa M.

TITLE OF INVENTION: Breast Cancer Biomarkers

FILE REPREBRENCE: 04-164-US

CURRENT APPLICATION NUMBER: US/11/112,908

CURRENT PILING DATE: 2004-04-23

PRIOR FILING DATE: 2004-06-01

PRIOR FILING DATE: 2004-06-01

PRIOR FILING DATE: 2004-06-01

PRIOR FILING DATE: 2004-11-30

PRIOR FILING DATE: 2004-11-30

PRIOR FILING DATE: 2004-11-30

PRIOR FILING DATE: 2004-11-07

NUMBER OF SEQ ID NOS: 511
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Score 32.8; DB Pred. No. 37; 0; Mismatches
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Pred. No. 43
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; Publication No. US20050266459A1
; GENERAL INFORMATION:
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    Query Match 2.6%;
Best Local Similarity 58.0%;
Matches 58; Conservative (
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SOFTWARE: Patentin version 3.3
SEQ ID NO 69
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ORGANISM: Homo sapiens
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Matches 55; Conserva
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DB 6;

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Best Local Similarity
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Best Local Simi
Matches 104;
                                                            82;
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                      Query Match
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                                                          Matches
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Publication No. US20050272054A1
GENERAL INFORMATION:
GENETAL INFORMATION:
TITLE OF INVENTION: GENETIC POLYMORPHISMS ASSOCIATED WITH
TITLE OF INVENTION: CARDIOVASCULAR DISORDERS AND DRUG RESPONSE, METHODS OF
TITLE OF INVENTION: DETECTION AND USES THEREOF
FILE REPERENCE: CL001559
CURRENT APPLICATION NUMBER: US/10/995,561
CURRENT FILING DATE: 2004-11-24
NUMBER OF SEQ ID NOS: 85702
SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                        703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            127 GGCTGGCTGCACTGGGAGCGCTTCATGTGCAACCTTGACTGCCAGGAAGAGCCAGATTCC 186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               849 GGCTTTCTGGTATGGCTCAGTTTTATGAGCCACGTTTAAGGAGGAGAAACCAACATTTT 908
                                                                                                                      644 ATTATACAGAAATCCGACAGTACTGCAATCACTGGCGAAATTTTGCTGACATTGATGATT
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                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                Sequence 53897. Application US/10750185
; Sequence 53897. Application US/10750185
; Publication No. US20050260603A1
; GENERAL INFORMATION:
    APPLICANT: NMI GENOMICS, INC.
    APPLICANT: NERR, Richard
    APPLICANT: ROBENFELD, David
    APPLICANT: ROBENFELD, David
    APPLICANT: BATES, Stephen
    APPLICANT: PANTIN, Dennis
    APPLICANT: PANTIN, Dennis
    TILLE REFERENCE: MMILIOD-2
    CURRENT APPLICATION NUMBER: US/10/750,185
; CURRENT APPLICATION NUMBER: US 60/437,482
; PRIOR PILING DATE: 2002-12-31
; PRIOR PILING DATE: 2002-12-31
; NUMBER OF SEQ ID NOS: 64922
; SOFTWARE: PatentIN version 3.1
; SEQ ID NO 53897
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                                         Length 190882;
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2.6%; Score 32.4; DB 6; Length 1685;
Best Local Similarity 60.0%; Pred. No. 2.3;
Matches 54; Conservative 0; Mismatches 36; Indels 0
                                                                               Indels
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                                                                                                                                                                                                   743
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                                                                                 42;
                                         DB 7;
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                                                          Pred. No. 44;
0; Mismatches
                                       Score 32.8;
Pred. No. 44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; TYPE: DNA
; ORGANISM: Bovine 19866880964900
US-10-750-185-53897
                                     Query Match 2.6%;
Best Local Similarity 58.0%;
Matches 58; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; TYPE: DNA
; ORGANISM: Homo sapiens
US-10-995-561-13246
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US-10-750-185-53897
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LENGTH: 86081
US-11-121-086-69
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; Publication No. US20050272054A1
; GENERAL INFORMATION:
; APPLICANT: CARGILL, Michele et al.
; TITLE OF INVENTION: GENETIC POLYMORPHISMS ASSOCIATED WITH
; TITLE OF INVENTION: CARDIOVASCULAR DISORDERS AND DRUG RESPONSE, METHODS OF
                                                                                                                            104 GATTGGCAAGGACGCCTACCATGGCTGGCTGCACTGGGAGCGCTTCATGTGCAACCTTG 163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                500 GACACATTTAGTGAATAAACAATGATGCAGAAAAGCCATAATACATTTTGGAGAGAGT 559
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                                                                                                                                                                                                                                          164 ACTGCCAGGAAGAGCCAGATTCCTGCATCAGTGAGAAGCTCTTCATGGAGATGGCAGAGC 223
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           Length 86081;
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Pred. No. 2.5;
0; Mismatches 120; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: FANTIN, Dennis
TITLE OF INVENTION: COMPOSITIONS FOR INFERRING BOVINE TRAITS
FILE REFERENCE: MMI1100-2
CURRENT APPLICATION NUMBER: US/10/750,185
CURRENT FILING DATE: 2003-12-31
PRIOR PLILING DATE: 2002-12-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       395 GGATTTATGCAGATGTTGGAAATAAAACCTGCGCAGGCTTCCCT 438
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                                                                        Indels
2.5%; Scor.
48.0%; Pred. No. 41,
... 3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 29504, Application US/10750185; Publication No. US20050260603A1; GENERAL INFORMATION:
APPLICANT: MMI GENONICS, INC.
APPLICANT: KERR, Richard
APPLICANT: KERR, Richard
APPLICANT: KOSENFELD, David
APPLICANT: BOSENFELD, David
APPLICANT: BATES, Stephen
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SOFTWARE: Patentin version 3.1
SEQ ID NO 29504
LENGTH: 1254
                                                                        Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                           172 GGTGGGCAAAGGCTTTGACCTTGCCCTGGCGGTTAGTGGCGGTGCAGACGTAGGTACCTG 113
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; Sequence (0280, Application US/10750185
; Publication No. US20050260603A1
; GENERAL INFORMATION:
   APPLICANT: MI GENOMICS, INC.
   APPLICANT: ROSENFELD, David
   APPLICANT: ROSENFELD, David
   APPLICANT: BATES, Stephen
   APPLICANT: BATES, Stephen
   APPLICANT: PANTIN, Dennis
   TITLE OF INVENTIN, Dennis
   TITLE OF INVENTIN, Dennis
   TITLE OF INVENTIN, Dennis
   TITLE OF INVENTION: COMPOSITIONS FOR INFERRING BOVINE TRAITS
   CURRENT PAPLICATION NUMBER: US/10/750,185
   CURRENT PLING DATE: 2003-12-31
   RIOR PRING DATE: 2002-12-31
   NUMBER OF SEQ ID NOS: 64922
   SOFTWARE: PALENTIN VERSION 3.1
   SENTING APPLICATION VERSION 3.1
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                                                                                                                                                                                                                                                                                                                     DB 6; Length 201;
                                                                                                                                                                                                                                                                                                                                                                     87; Indels
TITLE OF INVENTION: DETECTION AND USES THEREOF PILE REFERENCE: CLOODISS9
CURRENT APPLICATION NUMBER: US/10/995,561
CURRENT FILING DATE: 2004-11-24
NUMBER OF SEQ ID NOS: 85702
SOFTWARE FALSEQ for Windows Version 4.0
LENGTH: 201
                                                                                                                                                                                                                                                                                                                     2.5%; Score 31.8; DB
49.1%; Pred. No. 0.83;
tive 0; Mismatches
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; ORGANISM: Bovine 19866880544951
US-10-750-185-60280
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                                                                                                                                                                                                                    TYPE: DNA ORGANISM: Homo sapiens
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Best Local Similarity
Matches 84; Conserv
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US-10-750-185-60280
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                                                                            APPLICANT: Zuker, Charles S.
APPLICANT: Erlenbach, Isolda
APPLICANT: Erlenbach, Isolda
APPLICANT: Ryba, Nicholas J. P.
APPLICANT: Ryba, Nicholas J. P.
APPLICANT: The Regents of the University of California
APPLICANT: The Government of the United States of America
APPLICANT: The Government of the United States of America
APPLICANT: Department of Health and Human Services
TITLE OF INVENTION: A Mammalian Magnesium/Manganese Sensing G Protein
TITLE OF INVENTION: Coupled Receptor
TITLE OF INVENTION: Coupled Receptor
TITLE OF INVENTION: Coupled Receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OTHER INFORMATION: mouse magnesium/manganese sensing G protein OTHER INFORMATION: coupled receptor (GPCR) R5.24, Mg receptor, Mn OTHER INFORMATION: receptor
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                                                                                                                                                                                                                                                                                                                                                                                                                           CURRENT APPLICATION NUMBER: US/10/841,129
CURRENT FILING DATE: 2004-05-07
NUMBER OF SEQ ID NOS: 7
SOFTWARE: PATENTIN VEY: 2.1
Sequence 3, Application US/10841129; Publication No. US20050250113A1; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1402 ¢GTGGGCATCAAAGTGAA 1385
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GenCore version 5.1.6 (c) 1993 - 2005 Compugen Ltd. Copyright

- protein search, using sw model OM protein December 24, 2005, 08:33:27 Run on:

; Search time 187 Seconds (without alignments) 989.190 Million cell updates/sec

Title: Perfect score:

US-10-602-219-12 2314 1 MQLRNPELHLGCALALRFLA......RLRSHINPTGTVLLQLENTM 421 Sequence:

Scoring table:

BLOSUM62 Gapop 10.0 , Gapext 0.5

2443163 segs, 439378781 residues Searched: 2443163 Total number of hits satisfying chosen parameters:

seq length: 0 seq length: 200000000 Minimum DB Maximum DB

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

A Geneseq_21:*

1. geneseqp1990s:*
2. geneseqp2000s:*
3. geneseqp2000s:*
5. geneseqp2001s:*
6. geneseqp2001s:*
7. geneseqp2001s:*
9. geneseqp2001s:*
9. geneseqp2001s:* Database

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES	Description	0 Aae28210 Human rGA	Add84751	Adj88277 Human	1 Adm48681 Human	Adu66916 Human	Aea27445 Human	Rea27472 Human	Aae28211 Human	Add84753 Human	9 Adj88279 Human WT	Adm48683 Human	Adu66918 Human	Aea27447 Human	Aar53765 Alpha-	Aar63234 1	Aar70207 Alpha-	. Aae28206	4 Adf76604 Novel hum			Adu18066	6 . Adu74416 Human alp	9 Ady19459 PRO polyp	Odd 30051.150
SOM	9	AAE28210	ADD84751	ADJ8827	ADM4868	ADU66916	AEA27445	AEA27472	AAE2821	ADD84753	ADJ88279	ADM48683	ADU66918	AEA27447	AAR53765	AAR63234	AAR70207	AAE28206	ADF76604	ADN49740	ADP24703	ADU18066	ADU74416	ADY19459	20071708
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d	Query Match	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	001
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Human	Нишап	Нишап	Human	Human	Human	Human	Human	Precursor	Human	Human	Human	Human								
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AEA27471	AEB43188	ABM79001	AAE28209	ADD84749	ADJ88275	ADM48679	ADU66914	AEA27443	AAE28207	ADD84745	ADJ88271	ADM48675	ADU66910	AEA27439	AAY48575	AAR07305	AAE28208	ADD84747	ADJ88273	ADM48677
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2314	2314	2314	2314	2314	2314	2314	2314	2314	2314	2314	2314	2314	2314	2314	2314	2311	2309	2309	2309	2309
25	56	27	28	29	30	31	32	33	34.	35	36	37	38	39	40	41	42	43	44	45

ALIGNMENTS

RESULT 1

Human; alpha-galactosidase; lysosomal enzyme; lysosomal storage disease; therapeutic; rGAL-8. AAE28210 standard; protein; 421 AA. (first entry) Human rGAL-8 protein. 27-DEC-2002 AAE28210; AAE28210

401. .402 /note= "CTPP cleavage site" Location/Qualifiers Key Cleavage-site Homo sapiens

US2002088024-A1.

13-NOV-2001; 2001US-00993059. 04-JUL-2002

26-JUL-2000; 2000US-00626127.

(GARG/) GARGER S J. (TURP/) TURPEN T H. (KUMA/) KUMAGAI M H.

Kumagai MH; Garger SJ, Turpen TH,

WPI; 2002-681656/73. N-PSDB; AAD45223.

Novel human alpha-galactosidase polypeptide useful for treating lysosomal storage diseases.

Claim 7; Page 44; 88pp; English.

The invention relates to human alpha-galactosidase truncated at the carboxy terminus and the production of enzymatically active recombinant human and animal lysosomal enzymes. The invention is useful for producing lysosomal storage diseases, producing altered or mutated proteins, enzymatically active or otherwise, to serve as precursors or substrates for further in vivo or in vitro processing to

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The invention relates to human alpha-galactosidase derivatives and the nucleic acids encoding them. The polypeptides are used in a method for producing active recombinant human and animal lysosomal enzymes in a plant expression system. The enzymes can be used in enzyme replacement therapy for the therapeutic treatment of human and animal lysosomal diseases. This sequence represents a human alpha-galactosidase derivative polypeptide of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          recombinant human and animal system that can be used in enzyme
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Galactosidase; GAL; gene therapy; lysosomal storage disease;
Fabry's disease; Gaucher's disease; human; enzyme.
                                                                                                                                                                                                                                                                                100.0%; Score 2314; DB 7;
100.0%; Pred. No. 1.8e-221;
iive 0; Mismatches 0;
                                                                           New polynucleotide for producing active lysosomal enzymes in a plant expression
                                                                                                                              Claim 7; SEQ ID NO 12; 77pp; English.
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              Kumagai MH
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Best Local Similarity 100.
Matches 421; Conservative
             Turpen TH,
                                                                                                       replacement therapy.
                                      WPI; 2003-801257/75.
N-PSDB; ADD84750.
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                                                                                                                                                                                                                                                                                                                                                                                                                           RHISPQAKALLQDKDVIAINQDPLGKQGYQLRQGDNFEVWERPLSGLAWAVAMINRQEIG 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                   RHISPQAKALLQDKDVIAINQDPLGKQGYQLRQGDNFEVWERPLSGLAWAVAMINRQEIG 360
                                                                                                                                                                                           9
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                                                                                                                                                                                    MQLRNPELHLGCALALRFLALVSWDIPGARALDNGLARTPTWGWLHWERFWCNLDCQEEP
                                                                                                                                                                                                                     DSCISEKLFMEMAELMVSEGWKDAGYEYLCIDDCWMAPQRDSEGRLQADPQRFPHGIRQL
                                                                                                                                                                                                                                                                                     ANYVHSKGLKLGI YADVGNKTCAGFPGSFGYYDIDAQTFADWGVDLLKFDGCYCDSLENL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GPRSYTIAVASLGKGVACNPACFITQLLPVKRKLGFYEWTSRLRSHINPTGTVLLQLENT
                                                                                                                                                                    1 MOLRNPELHLGCALALRFLALVSWDIPGARALDNGLARTPTMGWLHWERFMCNLDCQEEP
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                                                                                                                                           Gaps
produce more effective therapeutic enzyme, for producing antibodies against lysosomal enzymes for medical diagnostic use, and in any commercial process that involves substrate hydrolysis. The present sequence is human rGAL-8 protein
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                                                                                                                  Length 421;
                                                                                                                                          Indels
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                                                                                                                  Score 2314; DB 5;
Pred. No. 1.8e-221;
0; Mismatches 0;
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                                                                                                                  Query Match 100.0%;
Best Local Similarity 100.0%;
Matches 421; Conservative 0
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADD84751 standard; protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
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TURPEN T H.
KUMAGAI M H.
                                                                                          Sequence 421 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           New alpha-galactosidase polypeptides, useful in producing recombinant lysosomal enzymes for the treatment of lysosomal storage diseases, such as Gaucher's disease, Niemann-Pick disease, Pabry disease and Tay-Sachs
                                                                                                                                                                                                                                                                                                                   Galactosidase; Gal; lysosomal enzyme; enzyme replacement therapy;
lysosomal storage disease; Gaucher's disease; Niemann-Pick disease;
Fabry disease; Tay-Sachs disease; cardiovascular; nephrotrophic; human;
                                           GPRSYTAVASLGKGVACNPACFITQLLPVKRKLGFYEWTSRLRSHINPTGTVLLQLENT
                                                             Grill LK;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pogue GP, Erwin RL,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Disclosure; SEQ ID NO 12; 72pp; English.
                                                                                                                                                                                                         ADM48681 standard; protein; 421 AA.
                                                                                                                                                                                                                                                                                          Human wild type rGAL-8 protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           88US-00160766.
88US-00160771.
89US-0030841.
92US-00923692.
92US-00923692.
93US-00176414.
94US-001764137.
94US-001364003.
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                                                                                                                                                                                                                                                                 03-JUN-2004 (first entry)
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POGUE G P.
ERWIN R L.
GRILL L K.
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29-DEC-1993;
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14-OCT-1994;
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(POGU/)
(ERWI/)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                useful in treating human and animal lysosomal Fabry's disease and Gaucher's diseases.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 421;
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Pred. No. 1.8e-221
0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                           Grill LK;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         71pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                            Erwin RL,
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100.0%;
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89US-00363138.

91US-00641617.

91US-00737899.

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91US-00737899.

91US-0073789.

92US-0099773.

93US-0017414.

94US-0017614.

94US-0017617.
                                                                                                        88US-00160771.
88US-00219279.
89US-00310881.
                                                              2003US-00602219
                                                                                           88US-00160766
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 7; SEQ ID NO 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 New lysosomal enzymes,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                storage diseases, e.g.
                                                                                                                                                                                                                                                                                                                                                                                                                                           Turpen TH, Pogue GP,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 2004-108227/11.
                                                                                                                                                                                                                                                                                                                                                                  (TURP/) TURPEN T H. (POGU/) POGUE G P. (ERWI/) ERWIN R L.
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ERWIN R L.
GRILL L K.
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     US2004016021-A1.
                                                              23-JUN-2003;
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01-AUG-1991;
31-JUL-1992;
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08-JUN-1989
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29-DEC-1993
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                                   22-JAN-2004
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N-PSDB; ADU66915
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                                                                                                                                                                                                                                                                                                                                                                                                                                            Lysosomal enzyme; glucocerebrosidase; GCB; GCR; alpha-galactosidase; enzyme replacement therapy; lysosomal storage disease; Gaucher's disease; Niemann-Pick disease; Fabry's disease; Tay-Sachs disease; Hurler-Schele syndrome; nephrotropic; human.
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                                                                              ANYVHSKGLKLGIYADVGNKTCAGFPGSFGYYDIDAQTFADWGVDLLKFDGCYCDSLENL
                                                                                                                                                                       ADGYKHMSLALNRTGRSIVYSCEWPLYMWPFQKPNYTEIRQYCNHWRNFADIDDSWKSIK
                                                                                                                                                                                  SILDWISFNQERIVDVAGPGGWNDPDMLVIGNFGLSWNQQVTQMALWAIMAAPLFMSNDL
                                                                                                                                                                                                                    SILDMTSFNQERIVDVAGPGGWNDPDMLVIGNFGLSWNQQVTQMALWAIMAAPLFMSNDL
                                                                                                                                                                                                                                            RHISPQAKALLQDKDVIAINQDPLGKQGYQLRQGDNFEVWERPLSGLAWAVAMINRQEIG
                                                                                                                                                                                                                                                                                       GPRSYTIAVASLGKGVACNPACFITQLLPVKRKLGFYEWTSRLRSHINPTGTVLLQLENT
                                                                    MQLRNPELHLGCALALRFLALVSWDIPGARALDNGLARTPTMGWLHWERFMCNLDCQEEP
                                                                                                    DSCISEKLFMEMAELMVSEGWKDAGYEYLCIDDCWMAPQRDSEGRLQADPQRFPHGIRQL
                                                                                                                                      ANYVHSKGLKLGIYADVGNKTCAGFPGSFGYYDIDAQTFADWGVDLLKFDGCYCDSLENL
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                                                                                                                                                                                                                                                                              GPRSYTIAVASLGKGVACNPACFITQLLPVKRKLGFYEWTSRLRSHINPTGTVLLQLENT
                                                    Gaps
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                                  Length 421;
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                                100.0%; Score 2314; DB 8;
larity 100.0%; Pred. No. 1.8e-221;
Conservative 0; Mismatches 0;
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13-NOV-2001; 2001US-00993059.
20-MAR-2002; 2002US-00103327.
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                                Query Match
Best Local Similarity
                 Sequence 421 AA;
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                                                                                                                                                                                                                                                                                                               M 421
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                                                                                                                                                                                                           The present invention relates to the production of human and animal lysosomal enzymes in plants by a transient plant expression system. The invention relates to glucocerebrosidase (GCB, GCR) and alphagalactosidase enzymes having a post-translational modification provided by the plant expression system. The invention is useful in enzyme replacement therapy for treating lysosomal storage diseases and as Gaucher's disease, Niemann-Pick disease, Pabry's disease and Tay-Sachs disease, Hurler's syndrome and Hurler-Scheie syndrome. The invention is also useful in researches for developing new approaches to medical treatment of lysosomal storage diseases and in industrial processes involving enzymatic substrate hydrolysis. The present sequence is the human alpha-galactosidase protein.
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pharmaceutical composition comprising a lysosomal enzyme, useful nzyme replacement therapy for the treatment of lysosomal storage
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                                                                                                                                                Disclosure; SEQ ID NO 12; 88pp; English.
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                                                                          diseases, such as Fabry's disease.
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The present invention relates to the production of human and animal lysosomal enzymes in plants by a transient plant expression system. The invention relates to glucocerebrosidase (GCB, GCR) and alpha-galactosidase (Gal) enzymes having a post-translational modification provided by the plant expression system. The invention is useful in enzyme replacement therapy for trading lysosomal storage diseases such as Gaucher's disease, Nabmann-pick disease, Pabry's disease, Tay-Sachs disease, Hurler's syndrome and Hurler-Scheie syndrome. The invention is also useful in researches for developing new approaches to medical treatment of lysosomal storage diseases and in industrial processes involving enzymatic substrate hydrolysis. The present sequence is the human alpha-galactosidase protein. Note: The present sequence is the SEQ ID NO: 8 which is shown in page 35-38 of the specification. This sequence
361 GPRSYTIAVASLGKGVACNPACFITQLLPVKRKLGFYEWTSRLRSHINPTGTVLLQLENT 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New isolated polypeptides useful for producing lysosomal enzymes in plants to be utilized in enzyme replacement therapy or for the therapeutic treatment of human or animal lysosomal storage diseases, e.g.
                                                                                                                                                                                                                                                                                                                                                                            Gauchers disease; metabolic; neurological disease; niemann pick disease; genetic disorder; Fabry disease; metabolic disorder; tay sachs disease; antilipemic; cns-gen.; lysosome storage disease; alpha-galactosidase;
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                                                                                                                                                                                                                                                                                                                                    Human alpha-galactosidase protein, rGAL-4, SEQ ID NO: 8 #2.
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100.0%; Pred. No. 1.8e-221;
iive 0; Mismatches 0;
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13-NOV-2001; 2001US-00993059.
20-MAR-2002; 2002US-00103327.
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                                            421 M 421
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                       New isolated polypeptides useful for producing lysosomal enzymes in plants to be utilized in enzyme replacement therapy or for the therapeutic treatment of human or animal lysosomal storage diseases,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The present invention relates to the production of human and animal
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100.0%; Pred. No. 1.8e-221;
tive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 28; SEQ ID NO 12; 88pp; English.
                                                                                                                                                                                                                                                                                                                                                              Kumagai MH;
                                                                                                                                                                                                                                                                                                                 (LARG-) LARGE SCALE BIOLOGY CORP.
                                                                                                                                                                                                                         26-JUL-2000; 2000US-00626127.
13-NOV-2001; 2001US-00993059.
20-MAR-2002; 2002US-00103327.
                                                                                                                                                                                 08-NOV-2004; 2004US-00984389.
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1es 421; Conservative
                                                                                                                                                                                                                                                                                                                                                              Turpen TH,
                                                                                                                                                                                                                                                                                                                                                                                                          2005-404004/41.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaucher's disease.
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N-PSDB; AEA27444.
                                                                                        US2005125859-A1.
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                                                 Homo sapiens.
                                                                                                                                     09-JUN-2005
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ADD84753 standard; protein; 427 AA
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2001US-00993059,
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and animal lysosomal
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                                                                                    Sequence 427 AA;
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13-NOV-2001;
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                                                                                                                                                          RHISPQAKALLQDKDVIAINQDPLGKQGYQLRQGDNFEVWERPLSGLAWAVAMINRQEIG 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              human alpha-galactosidase polypeptide useful for treating lysosomal
                                                                                                                                                                                                                                                                                                                                                 Human; alpha-galactosidase; lysosomal enzyme; lysosomal storage disease;
therapeutic; rGAL-8R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The invention relates to human alpha-galactosidase truncated at the carboxy terminus and the production of enzymatically active recombinant
                  DSCISEKLFMEMABLMVSEGWKDAGYEYLCIDDCWMAPQRDSEGRLQADPQRFPHGIRQL
                                                    ANYVHSKGLKLGIYADVGNKTCAGFPGSFGYYDIDAQTFADWGVDLLKFDGCYCDSLENL
                                                                                     ADGYKHMSLALNRTGRSIVYSCEWPLYWWPFQKPNYTEIRQYCNHWRNFADIDDSWKSIK
                                                                                                                                                RHISPQAKALLQDKDVIAINQDPLGKQGYQLRQGDNFEVWERPLSGLAWAVAMINRQEIG
                                                                                                                                                                                          GPRSYTIAVASLGKGVACNPACFITOLLPVKRKLGFYEWTSRLRSHINPTGTVLLQLENT
        DSCISEKLFMEMAELMVSEGWKDAGYEYLCIDDCWMAPQRDSEGRLQADPQRFPHGIRQL
                                         ANYVHSKGLKLGIYADVGNKTCAGFPGSFGYYDIDAQTFADWGVDLLKFDGCYCDSLENL
                                                                                                             SILDWTSFNQERIVDVAGPGGWNDPDMLVIGNFGLSWNQQVTQMALWAIMAAPLFMSNDL
                                                                                                                                                                                  GPRSYTIAVASLGKGVACNPACFITQLLPVKRKLGFYEWTSRLRSHINPTGTVLLQLENT
                                                                                                                                                                                                                                                                                                                                                                                                            "CTPP cleavage site"
                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
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                                                                                                                                                                                                                                                                              AAE28211 standard; protein; 427
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N-PSDB; AAD45224.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (TURP/) TURPEN T H.
(KUMA/) KUMAGAI M H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GARGER S J.
TURPEN T H.
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Cleavage-site
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                    lysosomal enzymes for treating lysosomal storage diseases, producing an attered or mutated proteins, enzymatically active or otherwise, to serve as precursors or substrates for further in vivo or in vitro processing to a specialised industrial form for research or therapeutic uses, to produce more effective therapeutic enzyme, for producing antibodies against lysosomal enzymes for medical diagnostic use, and in any sequence is human rGAL-8R protein
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The invention is useful for producing
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                                                                                                                                                                                                                                                                                                                                         Query Match 100.0%; Score 2314; DB 5; Best Local Similarity 100.0%; Pred. No. 1.8e-221; Matches 421; Conservative 0; Mismatches 0;
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Fabry's disease; Gaucher's disease; human; enzyme.
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                                                                                  US2004016021-A1
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(ERWI/)
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                                                                                                                                                                                                                                                                                                    The invention relates to human alpha-galactosidase derivatives and the nucleic acids encoding them. The polypeptides are used in a method for producing active recombinant human and animal lysosomal enzymes in a plant expression system. The enzymes can be used in enzyme replacement therapy for the therapeutic treatment of human and animal lysosomal diseases. This sequence represents a human alpha-galactosidase derivative polypeptide of the invention.
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                                                                                                                                                                                 New polynucleotide for producing active recombinant human and animal lysosomal enzymes in a plant expression system that can be used in enzyme
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100.0%; Pred. No. 1.8e-221
ive 0; Mismatches 0;
                                                                                                                                                                                                                                                                    Claim 7; SEQ ID NO 14; 77pp; English
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                                                                                  Kumagai MH
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity 100.
nes 421; Conservative
                                                                                Garger SJ, Turpen TH,
(GARG/) GARGER S J.
(TURP/) TURPEN T H.
(KUMA/) KUMAGAI M H.
                                                                                                                      WPI; 2003-801257/75
                                                                                                                                                                                                                              replacement therapy.
                                                                                                                                             N-PSDB; ADD84752
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The invention relates to nucleotide encoding galactosidase (GAL). The invention is useful in gene therapy. The polynucleotides and polypeptides are useful in treating human and animal lysosomal storage diseases, e.g. Fabry's disease and Gaucher's diseases. The present sequence is human GAL protein.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          New lysosomal enzymes, useful in treating human and animal lysosomal storage diseases, e.g. Fabry's disease and Gaucher's diseases.
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100.0%; Pred. No. 1.8e-221;
ive 0; Mismatches 0;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Erwin RL,
                                             26-FEB-1988; 88US-00160771.
26-FEB-1988; 8BUS-00160771.
17-FEB-1988; 8BUS-0010871.
17-FEB-1989; 89US-00310881.
05-MAY-1989; 89US-00347637.
06-JUN-1989; 89US-00363138.
22-OCT-1990; 90US-00602244.
16-JAN-1991; 91US-006244.
11-JUL-1991; 91US-00737899.
11-JUL-1992; 92US-00923692.
11-JUL-1992; 92US-0093733.
29-DEC-1992; 92US-00176414.
19-JAN-1994; 94US-00116414.
19-JAN-1994; 94US-00184237.
26-JUL-2000; 2000US-00626127.
26-JUL-2000; 2000US-00626127.
2003US-00602219
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120 180 180

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300 300

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360

420 420

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Lysosomal enzyme; glucocerebrosidase; GCB; GCR; alpha-galactosidase; enzyme replacement therapy; lysosomal storage disease; Gaucher's disease; Niemann-Pick disease; Pabry's disease; Tay-Sachs disease; Hurler's syndrome; Hurler's syndrome; Hurler-Scheie syndrome; nephrotropic; human.
enzymes for enzyme replacement therapy for treating human and animal lysosomal storage diseases such as Gaucher's disease, Niemann-Pick disease, Fabry disease and Tay-Sachs disease. The present sequence is human wild type rGAL-8R protein. This sequence comprises a human rGAL-8 protein and a ER retention signal. This sequence is used in the exemplification of the invention.
                                                                                                                                                                                                                                                         ADGYKHMSLALALNRTGRSIVYSCEWPLYMWPFQKPNYTEIRQYCNHWRNFADIDDSWKSIK
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                                                                                                                             100.0%; Score 2314; DB 8; Length 427; 100.0%; Pred. No. 1.8e-221;
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13-NOV-2001; 2001US-00993059.
20-MAR-2002; 2002US-00103327.
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                                                                                                                                             Best Local Similarity 100.
Matches 421; Conservative
                                                                                                    Sequence 427 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New alpha-galactosidase polypeptides, useful in producing recombinant lysosomal enzymes for the treatment of lysosomal storage diseases, such as Gaucher's disease, Niemann-Pick disease, Fabry disease and Tay-Sachs
                                                                                                                                                                                                                                                                                                                                                                   Galactosidase, Gal, lysosomal enzyme; enzyme replacement therapy;
lysosomal storage disease; Gaucher's disease; Niemann-Pick disease;
Fabry disease; Tay-Sachs disease; cardiovascular; nephrotrophic; human;
 RHISPQAKALLQDKDVIAINQDPLGKQGYQLRQGDNFEVWERPLSGLAWAVAMINRQEIG
                                                              RHISPQAKALLQDKDVIAINQDPLGKQGYQLRQGDNPEVWERPLSGLAWAVAMINRQEIG
                                                                                                                 GPRSYTIAVASLGKGVACNPACFITQLLPVKRKLGFYEWTSRLRSHINPTGTVLLQLENT
                                                                                                    GPRSYTIAVASLGKGVACNPACFITQLLPVKRKLGFYEWTSRLRSHINPTGTVLLQLENT
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                                                                                                                                                                                                                                                         ADM48683 standard; protein; 427
                                                                                                                                                                                                                                                                                                                                           Human wild type rGAL-8R protein.
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26-FEB-1988; 89US-00160771.

22-OCT-1989; 89US-0010881.

23-OCT-1992; 90US-00600244.

31-JUL-1992; 92US-00923692.

29-DEC-1992; 92US-00937733.

29-DEC-1993; 93US-00176414.

19-JAN-1994; 94US-00184237.

14-OCT-1994; 94US-00324003.

21-MAY-1999; 99US-00316572.

26-JUL-2000; 2000US-00626127.

13-NOV-2001; 2001US-00993059.
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POGUE G P.
ERWIN R L.
GRILL L K.
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N-PSDB; ADM48682.
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                                                                                                                                                          M 421
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(GRIL/)
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(POGU/)
                                                                                                                                                                                                                               RESULT 11
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Gaucher's disease
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                                                                               Homo sapiens.
                                                                                                                                                                                                                                                                                                    New isolated
plants to be
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                                                                                                                                                                                                                                            Garger SJ,
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                                                                                                                                                         lysosonal enzymes in plants by a transient plant expression system. The invention relates to glucocerebrosidase (GCB, GCR) and alpha-
glaatcosidase enzymes having a post-translational modification provided by the plant expression system. The invention is useful in enzyme replacement therapy for treating lysosomal storage diseases such as Gaucher's disease, Niemann-Pick disease, Fabry's disease and Tay-Sachs disease, Hurler's syndrome. The invention is also useful in researches for developing new approaches to medical treatment of lysosomal storage diseases and in industrial processes involving enzymatic substrate hydrolysis. The present sequence is the
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                                                                              A pharmaceutical composition comprising a lysosomal enzyme, useful enzyme replacement therapy for the treatment of lysosomal storage
                                                                                                                                                  present invention relates to the production of human and animal
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                                                                                                                                                                                                                                                                                                                           100.0%; Score 2314; DB 8; Length 427; 100.0%; Pred. No. 1.8e-221;
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                                                                                                                           Disclosure; SEQ ID NO 14; 88pp; English
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                      Kumagai MH
                                                                                          enzyme replacement therapy for the
diseases, such as Fabry's disease.
                                                                                                                                                                                                                                                                            human alpha-galactosidase protein
LARGE SCALE BIOLOGY CORP.
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                      Turpen TH,
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Matches 421; Conserv
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                                                      N-PSDB; ADU66917
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     d polypeptides useful for producing lysosomal enzymes in e utilized in enzyme replacement therapy or for the treatment of human or animal lysosomal storage diseases, e.g.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The present invention relates to the production of human and animal lysosomal enzymes in plants by a translent plant expression system. The invention relates to glucocerebrosidaes (GCB, GCR) and alpha-galactosidaes (Gal) enzymes having a post-translational modification provided by the plant expression system. The invention is useful in enzyme replacement therapy for treating lysosomal storage diseases such as Gaucher's disease, Niemann-Pick disease, Fabry's disease, Tay-Sachs disease, Hurler's syndrome and Hurler-Scheie syndrome. The invention is treatment of lysosomal storage diseases and in industrial processes involving enzymatic substrate hydrolysis. The present sequence is the human alpha-galactosidase protein.
                                                                Gauchers disease; metabolic; neurological disease; niemann pick disease genetic disorder; Fabry disease; metabolic disorder; tay sachs disease; antilipemic; cns-gen.; lysosome storage disease; alpha-galactosidase;
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Human alpha-galactosidase protein, rGAL-8R, SEQ ID NO: 14.
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20-MAR-2002; 2002US-00103327.
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                                                                                                   ADGYKHMSLALARTGRSIVYSCEWPLYMWPFQKPNYTEIRQYCNHWRNFADIDDSWKSIK
                                                                                                                                                                                                                                                                      SILDWTSFNQERIVDVAGPGGWNDPDMLVIGNFGLSWNQQVTQMALWAIMAAPLFMSNDL
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                             MQLRNPELHLGCALALRFLALVSWDIPGARALDNGLARTPTMGWLHWERFMCNLDCQEEP
                                                                                   DSCISEKLFMEMAELMVSEGWKDAGYEYLCIDDCWMAPQRDSEGRLQADPQRFPHGIRQL
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/note= "N-linked glycosylation"
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/note= "N-linked glycosylation"
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                                                                                                                                                                                                                                                                                                                            Alpha-galactosidase A, Fabry disease, blood group O, blood group B, CHO, Chinese hamster ovary; enzyme replacement therapy; glycoconjugate;
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Length 429;
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Pred. No. 1.8e-221;
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15-NOV-1994
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Ношо

RESULT 14 AAR53765

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Bishop DF;
Desnick RJ,
Ioannou YA,
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WPI; 1994-340330/42 N-PSDB; AAQ77861 Recombinant human alpha-galactosidase A prodn. - using a mammalian host cell expression system to obtain high yields of enzymatically active enzyme.

Claim 3; Col 43-46; 60pp; English.

The amino acid sequence of the human alpha-galactosidase A (hAGA). The gane encodes a protein of 429 amino acids. Methods to overexpress and purify the protein include: (1) placing the 1.45 kb human hAGA gene fragment in a mammalian expression plasmid e.g. AAP91023 and purifying crossion protein comprising halfying crossion protein comprising halfying chromatography or (ii) by producing a fusion protein comprising hAGA chased to easily purified protein sequences e.g. the Staphyloccus protein comprising hAGA chased to easily purified protein sequences in a mammalian expression of plasmid. The fusion protein can be easily purified by affinity corrematography and the galactosidase protein released from the fusion protein can be easily purified by affinity corrematography and the galactosidase protein released from the fusion protein can be easily purified by affinity corrematography and the galactosidase protein released from the fusion protein column by cleavage with collagenase. The methods result in active alpha-galactosidase A protein. The hAGA can be used for enzyme replacement therapy in patients with the lysosomal storage disorder, Fabry diseases. The protein can also be used in vitro to modify alpha-D-galacto-glycoconjugates in a variety of processes e.g.

Sequence 429 AA;

ö Gaps ö 100.0%; Score 2314; DB 2; Length 429; 100.0%; Pred. No. 1.8e-221; ive 0; Mismatches 0; Indels 0; Query Match
Best Local Similarity 100.
Matches 421; Conservative

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RHISPQAKALLQDKDVIAINQDPLGKQGYQLRQGDNFEVWERPLSGLAWAVAMINRQEIG 360

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361 GPRSYTIAVASLGKGVACNPACFITQLLPVKRKLGFYEWTSRLRSHINPTGTVLLQLENT 420 GPRSYTIAVASLGKGVACNPACFITQLLPVKRKLGFYEWTSRLRSHINPTGTVLLQLENT 361

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| Sequence 12, Application US/0993059
| Publication No. US20020088024A1
| GENERAL INFORMATION:
| APPLICANT: CARGER, Stephen A. |
| APPLICANT: TURPEN, Thomas H. |
| APPLICANT: TURPEN, Thomas H. |
| APPLICANT: WINGAIL, Monto H. |
| TILLE OF INVENTION: PRODUCTION OF LYSOSOWAL ENZYMES IN TILLE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION |
| FILE REFERENCE: 008010087CPUSO6 |
| CURRENT APPLICATION NUMBER: US/09/993,059 |
| CURRENT APPLICATION NUMBER: US/09/993,059 |
| SOFTWARE: FastSEQ for Windows Version 4.0 |
| SEQ.ID NO 12.
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100.0%; Pred. No. 1.7e-221;
rative 0; Mismatches 0;
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US-10-984-389-10
US-10-99-99-10
US-10-103-22-6
US-10-602-219-6
US-10-851-388-6
US-10-984-389-6
US-10-984-389-6
US-10-103-327-8
US-10-103-327-8
US-10-602-219-8
US-10-602-219-8
US-10-602-219-8
US-10-981-389-8
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US-10-981-389-8
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US-10-103-327-4
US-10-103-327-4
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        TYPE: PRT
CORGANISM: Homo sapiens
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(cgn2_6/ptodata/1/pubpaa/US09_PUBCOMB.pep:*

(cgn2_6/ptodata/1/pubpaa/US108_PUBCOMB.pep:*

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US-10-602-220-12
US-10-981-388-12
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US-10-103-327-14
US-10-103-327-16
US-10-411-026-68
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                                                                                                                                                            Sequence 12, Application US/10103327

Publication No. US20030106095A1

GENERAL INFORMATION:
APPLICANT: GRAGER, Stephen A.
APPLICANT: TUREN, Thomas H.
TITLE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION
TITLE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION
FILE REFRENCE: 008010087CPUSG,
CURRENT APPLICATION NUMBER: US/10/103,327

CURRENT APPLICATION NUMBER: US/10/103,327

FRIOR PELICATION NUMBER: US/10/9993,059

PRIOR PELICATION NUMBER: US/10/9993,059

PRIOR FILING DATE: 2001-11-13

NUMBER OF SEQ ID NOS: 37

SEQ ID NO 12

LENGTH: 421
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; Sequence 12, Application US/10602219
; Publication No. US20040016021A1
; GENERAL INFORMATION:
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ORGANISM: Homo sapiens
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APPLICANT: Turgen, Thomas H.
APPLICANT: Purgen, Thomas H.
APPLICANT: Pogue, Gregory P.
APPLICANT: Pogue, Gregory P.
APPLICANT: Pogue, Gregory P.
APPLICANT: Brain, Robert L.
APPLICANT: Grill, Laurence K.
TITLE OF INTENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN PLANTS BY TRANIENT EXPRESSION
CURRENT PLING DATE: 1090-00-03-06-23
PRIOR PELICATION NUMBER: 09/224, 03
PRIOR FILING DATE: 1999-05-21
PRIOR FILING DATE: 1999-05-21
PRIOR PELICATION NUMBER: 08/324, 003
PRIOR PELICATION NUMBER: 08/184, 237
PRIOR FILING DATE: 1992-12-30
PRIOR FILING DATE: 1992-12-30
PRIOR FILING DATE: 1992-07-31
PRIOR FILING DATE: 1992-07-31
PRIOR FILING DATE: 1991-01-16
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100.0%; Pred. No. 1.7e-221;
ative 0; Mismatches 0;
Large Scale Biology Corporation
Turpen, Thomas H.
Pogue, Gregory P.
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Best Local Similarity 100.
Matches 421; Conservative
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ORGANISM: Homo sapiens
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Sequence 12, Application US/10851388
Publication No. US20040234516A1
Fublication No. US20040234516A1
GENERAL INFORMATION:
APPLICANT: GARGER, Stephen A.
APPLICANT: TURPEN, Thomas H.
TITLE OF INVENTION: PRODUCTION OF LYSOSOWAL ENZYMES IN TITLE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION FILE REFERENCE: 008010087CPUSO6
CURRENT FILING DATE: 2004-05-21
PRIOR PELICATION NUMBER: US/09/993,059
PRIOR FILING DATE: 2001-11-13
NUMBER OF SEQ ID NOS: 37
SOFTWARE: FRAESEQ for Windows Version 4.0
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US-10-984-389-12
; Sequence 12, Application US/10984389
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ORGANISM: Homo sapiens
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                                                                                                                                GENERAL INFORMATION:
APPLICANT: Large Scale Biology Corporation
APPLICANT: Turpen, Thomas H
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APPLICANT: Turpen, Thomas H
APPLICANT: Turpen, Monto H.
APPLICANT: Explain, Robert L.
APPLICANT: Explain, Robert L.
APPLICANT: Explain, Robert L.
APPLICANT: Explain Robert L.
APPLICANT: APPLICATION WINBER: US/10/602,220
CURRENT APPLICANTON NUMBER: US/10/602,220
CURRENT APPLICANTON NUMBER: 09/33.659
PRIOR APPLICANTON NUMBER: 09/33.659
PRIOR APPLICANTON NUMBER: 09/33.659
PRIOR APPLICANTON NUMBER: 09/324,003
PRIOR PLING DATE: 1999-05-21
PRIOR PLING DATE: 1999-12-20
PRIOR PLING DATE: 1994-10-14
PRIOR PLING DATE: 1994-10-14
PRIOR APPLICANTON NUMBER: 08/176,414
PRIOR APPLICANTON NUMBER: 08/184,237
PRIOR APPLICANTON NUMBER: 09/184,237
PRIOR APPLICANTON NUMBER: 09/184,237
PRIOR APPLICANTON NUMBER: 09/184,237
PRIOR PLING DATE: 1992-01-3
PRIOR PLING DATE: 1991-10-22
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                                                                       Sequence 12, Application US/10602220 Publication No. US20040023281A1 GENERAL INFORMATION:
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US-10-602-220-12
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Query Match
Best Local Similarity 100.
Matches 421; Conservative
              TYPE: PRT
ORGANISM: Homo sapiens
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ORGANISM: Homo sapiens
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LENGTH: 427
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Publication No. US20020088024A1
GENERAL INFORMATION:
APPLICANT: GARGER, Stephen A.
APPLICANT: TURPEN, Thomas H.
APPLICANT: KUMAGER, MONCO H.
TITLE OF INVENTION: POLANTE BY TRANSIENT EXPRESSION
FILE REPERENCE: 008010087C08506
CURRENT APPLICATION NUMBER: US/09/993,059
CURRENT FILING DATE: 2001-11-13
NUMBER OF SEQ ID NOS: 37
SOFTWARE: FASISEQ for Windows Version 4.0
                          APPLICANT: GRAEEN, Stephen A.
APPLICANT: TUREEN, Thomas H.
APPLICANT: TUREEN, Thomas H.
APPLICANT: TUREEN, Monto H.
TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN
TITLE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION
FILE REFERENCE: 00810087CPUS06
CURRENT APPLICATION NUMBER: US/10/984,389
CURRENT FILING DATE: 2004-11-08
PRIOR APPLICATION NUMBER: uS/10/993,059
PRIOR PLING DATE: 2001-11-13
NUMBER OF SEQ ID NOS: 37
SEQ ID NO 12
LENGTH: 421
                                                                                                                                                                                                                                                                                                                                    Query Match 100.0%; Score 2314; DB 5; Best Local Similarity 100.0%; Pred. No. 1.7e-221; Matches 421; Conservative 0; Mismatches 0;
Publication No. US20050125859A1
                                                                                                                                                                                                                                                                   TYPE: PRT
CRGANISM: Homo sapiens
US-10-984-389-12
               GENERAL INFORMATION:
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100.0%; Score 2314; DB 3; Length 427; 100.0%; Pred. No. 1.8e-221; ative 0; Mismatches 0; Indels 0.
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Publication No. US20030106095A1

GENERAL INFORMATION:
APPLICANT: GRAGER, Stephen A.
APPLICANT: TUREN, Thomas H.
TITLE OF INVENITION: PRODUCTION OF LYSOSOMAL ENZYMES IN
TITLE OF INVENITION: PRODUCTION OF LYSOSOMAL ENZYMES IN
TITLE OF INVENITION: PRODUCTION OF LYSOSOMAL ENZYMES IN
TITLE OF INVENITION: PLANTS BY TRANSIENT EXPRESSION
FILE REFERENCE: 008010087CPUS06
CURRENT FILING DATE: 2001-00-00-00-00
PRIOR FILING DATE: 2001-11-13
NUMBER OF SEQ ID NOS: 37
SOFTWARE: FREESEQ for Windows Version 4.0
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GENERAL INFORMATION:

APPLICANT: Large Scale Biology Corporation
APPLICANT: Turpen, Thomas H.
APPLICANT: Erwin, Robert L.
APPLICANT: Scale Scal
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Pred. No. 1.8e-221;
; Mismatches 0;
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; Publication No. US20040023281A1
; GENERAL INFORMATION:
ilarity 100.0%; P. Conservative 0;
     Local Similarity
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APPLICANT: Large Scale Biology Corporation

APPLICANT: Turpen, Thomas H.

APPLICANT: Turpen, Thomas H.

APPLICANT: Evain, Robert L.

APPLICANT: Evain, Robert L.

APPLICANT: Grill, Laurence K.

TITLE OF INVENTION PRODUCTION OF LYSOSOMAL ENZYMES IN PLANTS BY TRANIENT EXPRESSION

FILE REPERRENCE: LSBC-0087-CP093B

CURRENT PAPLICATION NUMBER: 09/602,219

CURRENT FILING DATE: 2001-11-13

PRIOR APPLICATION NUMBER: 09/626,127

PRIOR APLICATION NUMBER: 09/316,572

PRIOR PILING DATE: 1999-05-21

PRIOR PILING DATE: 1999-05-21

PRIOR APLICATION NUMBER: 08/324,003

PRIOR PILING DATE: 1993-12-29

PRIOR APLICATION NUMBER: 08/16,414

PRIOR APLICATION NUMBER: 08/16,414

PRIOR APLICATION NUMBER: 07/997,733

PRIOR PILING DATE: 1992-12-30

PRIOR PILING DATE: 1992-12-30

PRIOR PILING DATE: 1992-10-19

PRIOR APLICATION NUMBER: 07/993,692

PRIOR PILING DATE: 1992-10-19

PRIOR PILING DATE: 1992-10-19

PRIOR PILING DATE: 1992-10-19

PRIOR PILING DATE: 1991-01-19

PRIOR PILING DATE: 1991-01-16

PRIOR PILING DATE: 1991-01-19

PRIOR PILING DATE: 1991-01-19

PRIOR PILING DATE: 1991-01-19

PRIOR PILING DATE: 1991-01-16

PRIOR PILING DATE: 1991-01-16
ADGYKHMSLALNRTGRSIVYSCEWPLYMWPFQKPNYTEIRQYCNHWRNFADIDDSWKSIK 240
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SOFTWARE: Patentin version 3.2
SEQ ID NO 14
LENGTH: 427
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US-10-602-219-14
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Query Match

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Publication No. US200501258591
GENERAL INFORMATION:
APPLICANT: GARGER, Stephen A.
APPLICANT: TURPEN, Thomas H.
APPLICANT: KUNAGAI, Monto H.
TITLE OF INVENTION: PRODUCTION OF LYSOSOWAL ENZYMES IN
TITLE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION
FILE REPREBENCE: 0008010087CPUSO6
CURRENT APPLICATION NUMBER: US/10/984,389
CURRENT FILING DATE: 2004-11-08
PRIOR PILING DATE: 2004-11-13
NUMBER OF SEQ ID NOS: 37
SOFTWARE: FRASEQ for Windows Version 4.0
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100.0%; Pred. No. 1.8e-221;
ive 0; Mismatches 0;
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Best Local Similarity 100.
Matches 421; Conservative
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Publication No. US20040234516A1
GENERAL INFORMATION:
APPLICANT: GRAGER, Stephen A.
APPLICANT: TURPEN, Thomas H.
TITLE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION
TITLE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION
TITLE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION
CURRENT APPLICATION NUMBER: US/09/66
CURRENT FILING DATE: 2004-05-21
FRIOR FILING DATE: 2001-11-13
NUMBER OF SEQ ID NOS: 37
SOFTWARE: FASTEREQ for Windows Version 4.0
IENGTH: 427
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Pred. No. 1.8e-221;
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100.0%; Pred. No. 1...
... 0; Mismatches
; SOFTWARE: Patentin version 3.; SEQ ID NO 14; LENGTH: 427; TYPE: PRT; 7 TYPE: PRT; ORGANISM: Homo sapiens US-10-602-220-14
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Best Local Similarity 100.
Matches 421; Conservative
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GENERAL INFORMATION:

APPLICANT: Neose Technologies, Inc.

APPLICANT: DeFrees, Shawn

APPLICANT: DeFrees, Shawn

APPLICANT: Zopf, David

APPLICANT: Bayer, Robert

APPLICANT: Hakes, David

APPLICANT: APPLICATION NUMBER: US/10/41,026

CURRENT FILING DATE: 2001-10-19

FRIOR PLING DATE: 2001-10-19

FRIOR PLING DATE: 2002-06-07

FRIOR PPLICATION NUMBER: US 60/396,594

FRIOR PLING DATE: 2002-06-16

FRIOR PLING DATE: 2002-07-17

FRIOR PLING DATE: 2002-08-16

FRIOR PLING DATE: 2002-08-16

FRIOR PLING DATE: 2002-08-16

FRIOR PLING DATE: 2002-08-16

FRIOR FILING DATE: 2002-08-16
                                   241 SILDWISFNQERIVDVAGPGGWNDFDMLVIGNFGLSWNQQVIQMALWAIMAAFLFMSNDL 300
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CORGANISM: Homo sapiens
US-10-411-026-68
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APPLICANT: Bayer, Robert
APPLICANT: Bayer, Robert
APPLICANT: Bayer, Robert
APPLICANT: Bayer, Robert
APPLICANT: Hakes, David
APPLICANT: Hakes, David
APPLICANT: Hakes, David
APPLICANT: Hakes, David
APPLICANT: Caryn
TITLE OF INVENTION: ALPHA GALACTOSIDASE A: REMODELING AND GLYCOCONJUGATION OF ALPHA
TITLE OF INVENTION: ALPHA GALACTOSIDASE A
FILE REFERENCE: 040853-01-5082
CURRENT APPLICATION NUMBER: US 10/401,037
CURRENT PILING DATE: 2001-10-10
PRIOR PILING DATE: 2001-10-10
PRIOR PILING DATE: 2001-10-10
PRIOR PLILING DATE: 2002-06-07
PRIOR PLILING DATE: 2002-06-07
PRIOR PLILING DATE: 2002-06-07
PRIOR PLILING DATE: 2002-07-17
PRIOR PLILING DATE: 2002-07-17
PRIOR PLILING DATE: 2002-08-16
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tive 0; Mismatches 0;
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Publication No. US20040043446A1
GENERAL INFORMATION:
APPLICANT: Neose Technologies, Inc.
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Best Local Similarity 100.0
Matches 421; Conservative
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Search completed: December 24, 2005, 09:11:10 Job time : 168 secs
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                                           ADGYKHMSLALNRTGRSIVYSCEWPLYMWPFQKPNYTEIRQYCNHWRNFADIDDSWKSIK 240
                                                                                                                           SILDWTSFNQERIVDVAGPGGWNDPDMLVIGNFGLSWNQQVTQMALWAIMAAPLFMSNDL 300
                                                                                                                                                                                                           RHISPQAKALLQDKDVIAINQDPLGKQGYQLRQGDNFEVWERPLSGLAWAVAMINRQEIG 360
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APPLICANT: DeFrees, Shawn
APPLICANT: Doff, David
APPLICANT: Bayer, Robert
APPLICANT: Hakes, David
APPLICANT: Hakes, David
APPLICANT: How, Xi
APPLICANT: Bow, Caryn
TITLE OF INVENTION: GRANULOCYTE COLONY STIMULATING FACTOR: REMODELING AND
TITLE OF INVENTION: GLYCOCONJUGATION OF G-CSF
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                                                                   ADGYKHMSLALNRTGRSIVYSCEWPLYMWPFQKPNYTEIRQYCNHWRNFADIDDSWKSIK
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Best Local Similarity 100.0%; Pred. No. 1.8e-221;
Matches 421; Conservative 0; Mismatches 0;
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CURRENT APPLICATION NUMBER: US/10/410,962
CURRENT FILING DATE: 2003-04-09
PRIOR APPLICATION NUMBER: US/10/410,962
PRIOR APPLICATION NUMBER: US 60/328,523
PRIOR FILING DATE: 2001-10-10
PRIOR FILING DATE: 2001-10-19
PRIOR PLING DATE: 2001-10-19
PRIOR PLING DATE: 2002-06-07
PRIOR FILING DATE: 2002-06-07
PRIOR FILING DATE: 2002-06-25
PRIOR FILING DATE: 2002-06-25
PRIOR FILING DATE: 2002-06-25
PRIOR FILING DATE: 2002-06-17
PRIOR PRILING DATE: 2002-06-17
PRIOR APPLICATION NUMBER: US 60/391,777
PRIOR APPLICATION NUMBER: US 60/404,249
PRIOR FILING DATE: 2002-08-16
PRIOR FILING DATE: 2002-08-16
PRIOR FILING DATE: 2002-08-16
PRIOR FILING DATE: 2002-08-18
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US-10-410-962-68
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                                              RHISPQAKALLQDKDVIAINQDPLGKQGYQLRQGDNFBVWERPLSGLAWAVAMINRQEIG
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December 24, 2005, 08:50:53; Search time 13 Seconds (without alignments) 230.993 Million cell updates/sec
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2314
1 MQLRNPELHLGCALALRFLA......RLRSHINPTGTVLLQLENTM 421
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1: /cgn2_6/ptodata/2/pubpaa/USO8_NEW PUB.pep:*

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Copyright (c) 1993 - 2005 Compugen Ltd.
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

u.	3, Appli	 Appli 			32, Appl	8372, Ap				62, Appl	236,	1141,	103,	450,	65, A		3254, Ap	٠.	14, Appl	2, Appli	8, Appli	21,	29,	191, App	1314, Ap
Description	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Seguence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence
ID	US-11-073-626-3	US-11-073-626-1	US-11-074-176-108	US-11-057-058-68	US-10-467-657-32	US-10-467-657-8372	US-11-038-284-36	US-11-057-058-62	US-10-467-657-8554	US-11-129-143-62	US-10-510-386-236	US-10-821-234-1141	US-10-467-962B-103	US-10-131-826A-450	US-11-057-058-65	US-10-652-893-2	US-10-467-657-3254	US-10-793-626-3022	US-11-113-424-14	US-11-055-822-2	US-10-645-441-8	US-10-650-326B-21	US-11-051-568-29	US-10-873-528-191	US-10-793-626-1314
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& Query Match	3.7	3.5	3.5	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.4	3.4	3.3	3,3	3.3	3.3	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.5
Score	85	82	81	81	80.5	80.5	80	79.5	79	79	78.5	78	78	77.5	77.5	77	76.5	76.5	16	75.5	75.5	75	75	75	74.5
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26	74.5	3.2	573	9	US-10-467-657-684	684,	ď
27	74.5	3.2	996	7	US-11-057-058-67		p]
28	74	3.2	417	9	US-10-467-657-6612	6612	Αp
29	73.5	3.2	932	_	US-11-057-058-59	Sequence 59, App	٦,
30	73	٣	514	7	US-11-103-037-3	'n	1;
31	73	м	734	7	US-11-137-465-65	65,	p]
32	72	3.1	515	9	US-10-630-203-6		1
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34	72	٣	847	7	US-11-038-284-42	42, A	p]
35	70.5	9	316	9	US-10-821-234-1526	1526,	Ap
36	70.5	e	834	ø	US-10-928-446A-188	188,	App
37	70.5	٣	834	9	US-10-928-446A-192	192,	đđ
38	70.5	e	834	ø	US-10-928-446A-194	194,	ď
39	70.5	m	834	9	US-10-928-446A-196	196,	αd
40	70.5	m	834	9	US-10-928-446A-198	198,	ď
41	70.5	e	834	9	US-10-928-446A-200	200,	dd
42	70.5	٣	834	9	US-10-928-446A-202	202,	ď
43	70.5	٣	942	9	US-10-928-446A-190	190,	dd
44	70.5	ю	947	ø	US-10-928-446A-182	182,	App
45	70.5	3.0	950	9	US-10-928-446A-184	184,	App
					ALIGNMENTS		
RESULT 1	-426-						
; Sequence;	e 3, 7 tion N	Sequence 3, Application US/11073626 Publication No. US20050244926A1	on US/ 502449	110 26A	73626 1		
; GENERAL	INFO	GENERAL INFORMATION:					
, APPLICANT:		KUROSAWA,					
; APPLICANT	ANT:	HIROKAWA,	XOZO				

	12;	91 155	141	184 254	
sequence 3, Application US/11073626 Publication No. US20050244926A1 GENERAL INFORMATION APPLICANT: KUROSAWA, KEIKO APPLICANT: HIROKARAN, NOZO APPLICANT: HIROKARAN, NOZO APPLICANT: HIROKARAN, NOZO APPLICANT: HIROKARAN, NOZO TITLE OF INVENTION: NOVE! FRUCKEY! PEPLICATION NOWER: US/11/073,626 CURRENT PAPLICATION NUMBER: US/11/073,626 CURRENT FILING DATE: 2005-03-08 PRIOR PILING DATE: 2001-09-04 PRIOR FILING DATE: 2002-08-06 NUMBER OF SEQ ID NOS: 24 SEQ ID NO 3 LENGTH 437 TYPE: PRT TYPE: PRT TYPE: PRT	Query Match Best Local Similarity 20.4%; Pred. No. 0.62; Matches 46; Conservative 29; Mismatches 71; Indels 80; Gaps	Qy 32 LDNGLARTPTMGWLHWBRFMCNLDCQEBPDSCISEKLFWEMAELMVSEGWKDAGYEYLCI 91	Qy 92 DDCWMAPQRDSEGRLQADPQRFPHGIRQLANYVHSKGLKLGIYADVGNKT	QY 142 CAGFPGSFGYYDIDAQTFADWGVDLLKF-DGCYCDSLENLADGY:	Qy 185 KHMSLALNRIGRSIVYSCEWPLYMWPFQKPNYTEIRQYCNHWRNFA 230 :

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US-11-074-176-108
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           93 DCWMAPQRDSEGRLQADPQRFPHGIRQLANYVHSKGLKLG------IYADVGNKTC 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      143 AGFPGSFG---YYDIDAQTFADWGVDLLKFDGCYCDSLENLADGYKHMSL----ALNRTG 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        201 IGVETADGTKYYADKVVLAAGAWSPILVDLEDQCCSK----AWVYAHIQLTPEEAAEYKG 256
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Publication No. US20050250135A1

GENERAL INFORMATION:
APPLICANT: Klaenhammer, Todd R.
APPLICANT: Russell, William M.
APPLICANT: Alternann, Eric
APPLICANT: Alternann, Eric
APPLICANT: Moduliffe, Olivia
APPLICANT: Peril, Andrea Azcarate
TITLE OF INVENTION: Nucleic Acid Sequences Encoding
TITLE OF INVENTION: Stress-Related Proteins and Uses Therefore
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 7; Length 437;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ch 3.5%; Score 82; DB 7; Length 437
1 Similarity 19.5%; Pred. No. 1.2;
42; Conservative 31; Mismatches 82; Indels
                                                    Sequence 1, Application US/11073626

Publication No. US20050244926A1

GENERAL INFORMATION:
APPLICANT: HIRORAMA, KEIKO
APPLICANT: HIRORAMA, KOZO
APPLICANT: HIRORAMA, KOZO
GENERAL TOTAL CANTINAMA, NAOKI
TITLE OF INVENTION: NOVEL fructosyl peptide oxidase
FILE REFERENCE: 227590USO
CURRENT APPLICATION NUMBER: US/11/073,626
CURRENT FILING DATE: 2005-03-08
PRIOR APPLICATION NUMBER: US/10/232,655
PRIOR APPLICATION NUMBER: US 2001-266665
PRIOR APPLICATION NUMBER: UP 2001-266665
PRIOR FILING DATE: 2001-09-04
PRIOR FILING DATE: 2001-12-12
PRIOR FILING DATE: 2001-318151
PRIOR FILING DATE: 2001-318151
PRIOR FILING DATE: 2001-31820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 196 RSIVYSCEWPLYMWPFQKPNYTEIRQYCNHWRNFA 230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S57 VPVVYNGEFGF----FFEPNEFGVIKVCDEFPGFS 287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILE REFERENCE: 5051-694
CURRENT APPLICATION NUMBER: US/11/074,176
CURRENT FILING DATE: 2005-03-07
PRIOR APPLICATION NUMBER: 60/551,161
PRIOR FILING DATE: 2004-03-08
NUMBER OF SEQ ID NOS: 381
SOFTWARE: FREUSEQ for Windows Version 4.0
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: PRT
ORGANISM: Coniochaeta sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
Matches 42; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-11-074-176-108
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LENGTH: 310
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56 CQEEPDSCISEKLFMEMAELMVSEGWKDAGYEYLCIDDCWMAPQRDSEGRLQADPQRFPH 115
                                                                                                                                                                                                                            116 GIRQLANYVHSKGLKLGIYADVGNKTCAGFPGSFGYYDIDAQTFADWGVDLLKFDGCYCD 175
                                                                                                                                                                                                                                                         223 CNHWRNFAD----IDDSWKSIKSILDWTSF-----NQERIVDVAGPGGWNDPDMLVI 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        161 RMMTRQMVDAVLSMPEYNRFSKGIFSWVGFKTKYLDYHNVER---VAGESDWNTWKLFKY 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           123 -----YVHSKGLKLGIYADVGNKTCAG-----FPGSFGYYDIDAQTFADWGV 164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               467 VDPHIKVDSGYRVHEELRNLGLYV----KTRDGSDYEGWCWPGSAGYPDFTNPTMRAWWA 522
                                                                                                                                                   10 CYNEEESI---PLFYNAVE-KVMQTILDLDYEYWFVNDGSSDKSLEEMRQLQKNDPEHVH
                                                                                                                                                                                                                                                                                                                                          176 SLENLADGYKHMSLA-----LNRTGRSIVYSCEWPLYMWPFQKPNYTEI----RQY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: LEBOWILZ, Jonathan
APPLICANT: LEBOWILZ, Jonathan
APPLICANT: Maga, John
TITLE OF INVENTION: ACID ALPHA-GLUCOSIDASE AND FRAGMENTS THEREOF
FILE REFERENCE: SYM-011
CURRENT APPLICATION NUMBER: US/11/057,058
CURRENT FILING DATE: 2005-02-10
PRIOR APPLICATION NUMBER: US 6/543,812
PRIOR PILING DATE: 2004-02-10
NUMBER OF SEQ ID NOS: 68
SOFTWARE: Patentin version 3.3
SEQ ID NO 68
LENGTH: 944
                                                            58;
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  3.5%; Score 81; DB 7; Length 310; 20.9%; Pred. No. 0.98; ive 32; Mismatches 114; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 3.5%; Score 81; DB 7; Length 944; Best Local Similarity 26.5%; Pred. No. 4.3; Matches 36; Conservative 13; Mismatches 49; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 32, Application US/10467657; Publication No. US20050260581A1; GENERAL INFORMATION:
APPLICANT: CHIRON SpA
APPLICANT: FONTANA Maria Rita
APPLICANT: PORTANA Mariagrazia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-11-057-058-68
Sequence 68, Application US/11057058
Publication No. US20050244400A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       218 AMDGIADFSQAPLNIAVW 235
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                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; ORGANISM: Homo sapiens
US-11-057-058-68
Query Match
Best Local Similarity
Matches 54; Conserv
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RESULT 8
US-11-057-058-62
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           137 VGNKTCAGFPGSFGYYDIDAQTFADWGVDLLKFDGCYCDSLENLADGYKHMSLALNRTGR 196
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                                                                                                                                                                                                                                                                                                                                                                                                                                                 17 RFLALVSWDIPGARALDNGLARTPTMGWLHWERFMCNLDCQEEPDSCISEKLFMEMAELM 76
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3.5%; Score 80.5; DB 6; Length 414;
Best Local Similarity 19.4%; Pred. No. 1.6;
Matches 37; Conservative 30; Mismatches 79; Indels 4:
                                                                                                                                                                                                                                                                                                                                                        Query Match 3.5%; Score 80.5; DB 6; Length 414; Best Local Similarity 19.4%; Pred. No. 1.6; Matches 37; Conservative 30; Mismatches 79; Indels 4
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Publication No. US20050260581A1
GENERAL INFORMATION:
APPLICANT: CHIRON SpA
APPLICANT: FONTANA MARIA Rita
APPLICANT: PASIGNANI Vega
APPLICANT: MONACI Elisabetta
APPLICANT: MONACI Elisabetta
TITLE OF INVENTION: GONOCOCCAL PROTEINS AND NUCLEIC ACIDS
FILE REFERENCE:
APPLICANT: MASIGNANI Vega
PEPLICANT: WONACI Elisabetta
TITLE OF INVENTION: GONOCOCCAL PROTEINS AND NUCLEIC ACIDS
FILE REPERENCE:
                                                                                      CURRENT APPLICATION NUMBER: US/10/467,657
CURRENT FILING DATE: 2003-08-11
PRIOR APPLICATION NUMBER: GB-0103424.8
PRIOR FILING DATE: 2001-02-12
NUMBER OF SEQ ID NOS: 9218
SEQ ID NO 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CURRENT APPLICATION NUMBER: US/10/467,657
CURRENT FILING DATE: 2003-08-11
PRIOR APPLICATION NUMBER: GB-0103424.8
PRIOR FILING DATE: 2001-02-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQ ID NOS: 9218
SOFTWARE: SeqWin99, version 1.04
SEQ ID NO 8372
                                                                                                                                                                                                                                                                   ; TYPE: PRT
; ORGANISM: Neisseria gonorrhoeae
US-10-467-657-32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          , ORGANISM: Neisseria gonorrhoeae
US-10-467-657-8372
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US-10-467-657-8372
                                                                                                                                                                                                                                                 LENGTH: 414
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APPLICANT: COCKE, DAVID
APPLICANT: COCKE, DAVID
APPLICANT: DEBET, MARTINE
APPLICANT: GIBLEY, MICHAEL, JOHN
APPLICANT: GIBLEY, MICHAEL, JOHN
APPLICANT: GIBLOTTOM, CHRISTOPHER, MICHAEL
APPLICANT: SAFFORD, RICHARD
APPLICANT: SAFFORD, RICHARD
APPLICANT: WESTCOTT, ROGER, JOHN
TITLE OF INVENTION: IMPROVEMENTS IN OR RELATING TO PLANT STARCH COMPOSITION
FILE REPERENCE: 054163-5003-US
CURRENT FILING DATE: 2005-01-21
PRIOR FILING DATE: 1906-01-21
PRIOR PELICATION NUMBER: US/10/056,454
PRIOR FILING DATE: 1996-05-03
PRIOR FILING DATE: 1996-04-10
PRIOR FILING DATE: 1996-04-10
PRIOR PELICATION NUMBER: GB 9509229.2
PRIOR FILING DATE: 1996-04-10
PRIOR FILING DATE: 1996-04-10
PRIOR PELICATION NUMBER: GB 9509229.2
PRIOR PELING DATE: 1996-04-10
PRIOR APPLICATION NUMBER: GB 9509229.2
PRIOR APPLICATION NUMBER: GB 9509229.2
PRIOR PELING DATE: 1096-04-10
PRIOR APPLICATION NUMBER: GB 9509229.2
PRIOR PELING DATE: 1096-04-10
PRIOR APPLICATION NUMBER: GB 9509229.2
PRIOR PELING DATE: 1096-04-10
PRIOR APPLICATION NUMBER: GB 9509229.2
PRIOR PELING DATE: 1096-04-10
PRIOR APPLICATION NUMBER: GB 9509229.2
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              34;
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APPLICANT: MAGA, JOHN
TITLE OF INVENTION: ACID ALPHA-GLUCOSIDASE AND FRAGMENTS THEREOF
PILE REPERENCE: SYM-011
CURRENT PILING DATE: 2005-02-10
PRIOR APPLICATION NUMBER: US 60/543,812
PRIOR APPLICATION NUMBER: US 60/543,812
PRIOR FILING DATE: 2004-02-10
                                                         --EFDG-FCDRLCNLIQAEKY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 861;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3.5%; Score 80; DB 7
25.6%; Pred. No. 4.8;
tive 17; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; Sequence 62, Application US/11057058; Publication No. US20050244400A1; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                        Sequence 36, Application US/11038284 Publication No. US20050246793A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQ ID NOS: 68
SOFTWARE: PatentIn version 3.3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity 25.6*
Matches 32; Conservative
                                        : |: |:| 368 MVNE-IEGWPHA---
                                                                                                                                                                                           399 KHYFPCSLPLF 409
                                                                                                                              197 SIVYSCEWPLY 207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; TYPE: PRT
; ORGANISM: Lathyrus sp.
US-11-038-284-36
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265 PDMLVIGNFGLSWNQQVTQMALWAIMAAPLF-----MSNDLRHISPQAKALLQDKDV 316
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3.4%; Score 79; DB 7; Length 368;
Best Local Similarity 25.6%; Pred. No. 1.9;
Matches 50; Conservative 32; Mismatches 79; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: BEREY, Alan
APPLICANT: BRETZEL, Werner
APPLICANT: BRETZEL, Werner
APPLICANT: HUMBELIN, Markus
APPLICANT: HUMBELIN, Markus
APPLICANT: MAYER, Anne F.
APPLICANT: YELISERV, Alexei A.
TITLE OF INVENTION: IMPROVED ISOPRENOID PRODUCTION
FILE REPERBURE: C38435/121966
CURRENT APPLICATION NUMBER: US/11/129,143
CURRENT FILING DATE: 2005-05-13
NUMBER OF SEQ ID NOS: 197
SOFTWARE: Patentin version 3.1
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Sublication No. US20050344922A1
GENERAL INFORMATION:
APPLICANT: Andersen, Jens Tonne
APPLICANT: Clausen, Ib Groth
APPLICANT: Olsen, Peter Bjarke
APPLICANT: Jorgensen, Steen Troels
APPLICANT: Jorgensen, Michael Dolberg
APPLICANT: Basmussen, Michael Dolberg
TITLE OF INVENTION: Improved Bacillus Host Cell
FILE REFREENCE: 10294.204-US
CURRENT APPLICATION NUMBER: US/10/510,386
CURRENT PILLING DATE: 2004-10-04
NUMBER OF SEQ ID NOS: 248
SEQ ID NO 236
LENGTH: 622
198 RELLQKLNQ---KQQCNVYLPWGNEAE-----
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275 VGIYTDTDPI-KTGVQV 290
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US-11-129-143-62
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Publication No. US20050260581A1
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: CHIRON SpA
APPLICANT: FONTANA Maria Rita
APPLICANT: PIZZA Mariagrazia
APPLICANT: MASIGNANI Vega
APPLICANT: MASIGNANI Vega
APPLICANT: MONACI Elisabetta
TITLE OF INVENTION: GONOCOCCAL PROTEINS AND NUCLEIC ACIDS
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CURRENT FILING DATE: 2003-08-11
PRIOR APPLICATION NUMBER: GB-0103424.8
PRIOR FILING DATE: 2001-02-12
NUMBER OF SEQ ID NOS: 9218
SOFTWARE: SeqWin99, Version 1.04
SEQ ID NO 8554
LENGTH: 322
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity 20.73
Matches 78, Conservative
                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
Matches 42; Conserv
                                            , LENGTH: 1827
; TYPE: PRT
; ORGANISM: Rabbit sp.
US-11-057-058-62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 9
US-10-467-657-8554
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SEQ ID NO 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        221
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326 EEIVKWMGWEPFKELYDLAVELIRRGHAYVDHQTADEIKEYREKKMNSPWRDRPIEESLK 385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             68 LFMEMAELMVSEGWKDAGYEYLCIDDCWMAPQRDSEGRLQADPQRFPHGIRQLANYVHSK 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           128 GLKLGIYADVGNKTCAGFPGSFGYYDIDAQTFADWGVDLLKFDGCYCDSLENLADGYKHM 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      422 RIKFAPHPKAGDKWCI-YPS----YD--------YAHCTVDSLENIT----HS 457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     188 SLALN-RIGRSIVYSCEWPL-----YMWPFQKPNYTEIRQYCNHWRNFADIDDSWKS 238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  239 IKSILDWTSFN---QERIVDVAGPGGWNDPDMLVIGNFGLSWNQQVTQMALWAIM---- 290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ::: | : | | : | | : | | 494 -NIYWSKRKINYIVTNKYVD-----GWDDPRLLTLS--GLR-RRGVTSTAINAFVRGIGI 544
                                                                                                                                                                                                        APPLICANT: Plesch, Gunnar
APPLICANT: Plesch, Gunnar
APPLICANT: Blau, Astrid
APPLICANT: Bau, Astrid
APPLICANT: Deschner, Klaus
APPLICANT: Methicu
TITLE OF INVENTION: Identification of Herbicidally Active Substances
FILE REFERENCE: 2000 837.
FULE REFERENCE: 2000 88-14
CURRENT FILING DATE: 2003-08-14
PRIOR FILING DATE: 2002-02-13
NUMBER OF SEQ ID NOS: 109
SEQ ID NO 103
LENGTHER: Patentin Vers. 2.0
LENGTH: 786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3.4%; Score 78; DB 6; Length 786;
19.0%; Pred. No. 6.7;
vative 39; Mismatches 106; Indels 180;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TRSDGSMIHVSRLEHHIREELNKTAPRTMVVLNPLKVVITN 585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ----AAPLFMSNDLRHI-----SPQAKALLQDKDVIAIN 320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5 NPELHLGCALALRFLALVSWDIPGARALDNGLAR----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     39 TPTMGWLHWERFMCNLDCQEE------
| | :::| : | | | | S11 KFQEGGEBERLALE---TALMYGAKKPL
                                                                                                                                      ; Sequence 103, Application US/10467962B
; Publication No. US20050246784A1
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-10-131-826A-450
Sequence 450, Application US/10131826A
; Publication No. US20050245730A1
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: PRT ORGANISM: Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gao, Wei-Qiang
Gerritsen, Mary E.
Goddard, Audrey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Baker, Kevin P.
APPLICANT: Bereaini, Maureen
APPLICANT: DeForge, Laura
APPLICANT: Desnoyers Luc
APPLICANT: Filvaroff, Ellen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sest Local Similarity 19.0%
Matches 76; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; ORGANISM: Arab;
US-10-467-962B-103
                                                                                                                     US-10-467-962B-103
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APPLICANT:
APPLICANT:
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publication No. US20050255114A1

GENERAL INFORMATION:
APPLICANT: Labat, Tabat, Susan
APPLICANT: Stache-Crain, Birgit
APPLICANT: Tang, Y. Tom
TILE OF INVENTION: Methods for Diagnosis and Treatment of Preeclampsia
FILE REFERENCE: 821A
CURRENT APPLICATION NUMBER: US/10/821,234
CURRENT PILING DATE: 2004-04-07

PRIOR PILING DATE: 2003-04-07

NUMBER: OF SEQ ID NOS: 1704

SOFTWARE: Dt SEQ_Genes Version 1.0

SEQ ID NO 1141

LENGTH: 760
                                                                                                                                                16;
                                                                                                                                                                                                                       151 YYDIDAQTFADWG-----VDLLKFDGCYCDSLEN---LADGY--KHMSLALNRTGRSIV 199
                                                                                                                                                                                                                                                                                                                                285 NYEPARGNVADWGDSYGNRVDRFLAGVAYLDGERPSFVMARGYYTRTVLVAYNFRGGKLT 344
                                                                                                                                                                                                                                                                                                                                                                                    200 YSCEWPLYMWPFQK--PNYTEIRQYCNHWRNFADIDDSWKSIKSILDWTSFNQERI---- 253
                                                                                                                                                                                                                                                                                                                                                                                                                 -----FGLSWNQQVTQMALWA 288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         386 AVDHDGKGLYSTGWGHGDAMHTGNLDPSRPGLEVFQVHENSNSPYGLSFRDAKTGKIIWG 445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           289 I------MAAPLFMSNDLRHISPQAKA---LLQDKDVIAINQDPLGKQGYQLRQGDN 336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | : | : | : | : | : | | 362 RIVINYFSAHDNDANLQMDIFLEEDGNVNSKLTKDSVWNYHCWNEAWMTRPDLPVGFGGW 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               97 ----APQRDSEGRLQADP---QRFPHGIRQLANYVHSKGLKLGIYADVGNKTCAGFPGS 148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ----HVČFQFDAP 458
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            149 FGYYDIDAQTFADWGVDLL----KFDGCYC---------------------------DSLENLADGY
                                                                                                                                                Gaps
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                                                                                                                                                                                          97 APQRDSEGRLQADPQRFPHGIRQLANYVHSKGLKLGIYADVGNKTCAGFPGSFG
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                                                                                             Query Match

3.4%; Score 78.5; DB 6; Length 622;
Best Local Similarity 21.4%; Pred. No. 4.4;
Matches 65; Conservative 24; Mismatches 94; Indels 121;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3.4%; Score 78; DB 6; Length 760;
19.2%; Pred. No. 6.4;
tive 25; Mismatches 59; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             422 QAVDSTPQENSDGMYRCGPASVQAIKHG----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                              254 -VDVAGPG----GWNDPDMLVIGN-----
  ; TYPE: PRT
; ORGANISM: Bacillus licheniformis
US-10-510-386-236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity 19.23
Matches 40; Conservative
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; ORGANISM: Homo sapiens
US-10-821-234-1141
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US-10-821-234-1141
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Godowski, Paul J.

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Job time : 14 secs
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                                                                                                                                                                 APPLICANT: Zhang, Zemin TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC TITLE OF INVENTION: ACIDS ENCODING THE SAME TITLE OF INVENTION: ACIDS ENCODING THE SAME CURRENT APPLICATION NUMBER: US/10/131,826A CURRENT PILING DATE: 2002-04-24 PRIOR PILING DATE: 1997-06-18 PRIOR PILING DATE: 1997-06-18 PRIOR PILING DATE: 1997-08-26 PRIOR PILING DATE: 1997-09-17 PRIOR APPLICATION NUMBER: 60/059115 PRIOR PILING DATE: 1997-09-17 PRIOR PILING DATE: 1997-09-18 PRIOR PILING DATE: 1997-09-18 PRIOR PILING DATE: 1997-09-19                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            23;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      144 --GFPGSFGYYDIDAQTFADWGVDLLKFDGCYCDSLENLADGYKHMSLALNRTGRSIVYS 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              202 C---EWPL-----YMWP--FQKPNYTEIRQYCNHWRNFAD--IDDSWKSIKSIL 243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       244 DWTSFNQERIVDVAGPGGWNDPDMLVIGNFGLSWN--QQVTQMALWAIMAAPLFMSN--- 298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -----TLAGNL---MDCGRNVCALASW----LSNFQG 334
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        335 RYDGNLQCASPE---YAQGBDVLDAVYAFHLCEDGAE------PTSGHLLS-AV 378
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               202 RNSFAGLFKLTELHLE-----HNDLVKVNFAHFPRLISL-----HSLCLRRNKVAIVVS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             145 SYNKLÓALAPDLFHGLKKÍTTLHMRÁNAIQFVPVRIFQDCRSÍK---FLDÍGYNQLKSLÁ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Remaining Prior Application data removed - See File Wrapper or PALM NUMBER OF SEQ ID NOS: 550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3.3%; Score 77.5; DB 6; Length 522;
23.3%; Pred. No. 4.4;
ive 48; Mismatches 107; Indels 125;
                                                         Stewart, Timothy A
                                                                                                                     Watanabe, Colin K
Wood, William
Sherwood, Steven
Smith, Victoria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity 23.3
Matches 85; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM: Homo Sapien
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                                                  APPLICANT:
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APPLICANT:
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390 VVILDPGISTNKT----YETYIRGMKH-D 413
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           414 VFLKRNGKPYLGSV-WPGPVYFPDFLKPSALTFWTDEIKRFL----NLLPVDGLWIDMNE 468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ----GWND-----PDMLVIGNFGLS 276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       529 RVTRAALIKLIEKRPFVLSRSTFSGSGKYTAHWTGDNAATWNDLVYSIPSMLDFGLFGI- 587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     277 WNQQVTQMALWAIMAAPL--FMSNDLRHISPQAKALLQDKDVIAINQD--PLGKQGYQLR 332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -----PMVGADICGFLGNTTEEL---CRRWIQLGAFYPFSRDHSSLGTTYQELY 633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           333 QGDNFEVWERPLSGLAWAV------AMINRQEIGGPRSY-----TIAVAS---L 372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ----- 251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            132 GIYADVG---NKTCAGPPGSFGYYDIDAQTFADWGVDLLKFDGCYCDSLENLADGYKHMS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    469 ISNFISSPPIPGSTLDNPPYKINNSGVMLPIINKTIPPTAMHYGDIPEYNVHNLFGYLEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   73 AELMVSEGWKDAGYEYLCIDDCWMAPQRDSEGRLQADPQRFP-HGIRQLANYVHSKGLKL
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GKGVACNP----ACPITQLLP------VKRKLGFYEWTSRLRSHIN 408
Sequence 65, Application US/11057058
Publication No. US20050244400A1
GENERAL INFORMATION:
APPLICANT: LeBOWItz, Jonathan
APPLICANT: LeBOWItz, Jonathan
TITLE OF INVENTION: ACID ALPHA-GLUCOSIDASE AND FRAGMENTS THEREOF
FILE REFERENCE: SYM-011
CURRENT APPLICATION NUMBER: US/11/057,058
CURRENT PILING DATE: 2005-02-10
FRIOR APPLICATION NUMBER: US 60/543,812
FRIOR FILING DATE: 2004-02-10
NUMBER OF SEQ ID NOS: 68
SOFTWARE: Patentin version 3.3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels 207;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 903;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity 17.7%; Pred. No. 9.1; Similarity 17.7%; Pred. No. 9.1; S4; Conservative 47; Mismatches 136;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Search completed: December 24, 2005, 09:07:58
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    242 ILDWTS-----
                                                                                                                                                                                                                                                                                                                                                                                                                                           ; ORGANISM: Spinacia oleracea
US-11-057-058-65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
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Best Local
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83, Appl 56545, A 55673, A 4, Appli 14, Appl

Sequence Sequence Sequence Sequence Sequence Sequence Sequence

Sequence Sequence Sequence

Sequence

45064, A 29, Appli 29, Appli 4, Appli 5, Appli 6, Appli 161, Appl 107, Appl 107, Appl 1, Appli 31, Appli 31, Appli 31, Appli 8371, Ap

Sequence Seq

Sequence Sequence S

Sequence Sequence Sequence Sequence

Sequence Sequence Sequence

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TITLE OF INVENTION:

TITLE OF INVENTION: Mannosidases and Methods for using the Same;

TITLE OF INVENTION: Mannosidases and Methods for using the Same;

FILE REFERENCE: 62447-02;

CURRENT APPLICATION NUMBER: US/11/073,112

FRIOR APPLICATION NUMBER: US 10/089,211

PRIOR FILING DATE: 2002-02-25

PRIOR FILING DATE: 2000-10-02

PRIOR FILING DATE: 2000-10-02

PRIOR PELING DATE: 1999-10-01

NUMBER OF SEQ ID NOS: 25

SOFTWARE: Patentin version 3.3

SEQ ID NO 5
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US-11-008-284-16
US-11-108-284-19
US-10-750-185-56545
US-11-0750-185-56573
US-11-073-626-4
US-11-073-626-4
US-11-073-626-2
US-11-075-822-1
US-10-750-185-4314
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US-11-102-240-161
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US-10-750-185-45595
US-11-103-037-6
US-10-103-038-5
US-10-103-038-5
US-10-103-038-5
US-10-10-103-03
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US-11-073-112-5
Sequence 5, Application US/11073112
Publication No. US20050260627A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; TYPE: DNA
; ORGANISM: Aspergillus nidulans
US-11-073-112-5
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-G-cgnz 1/USPTO spool p/US10602219/runat_23122005 151144_17285/app_query.fasta_1.583
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-THR MIN=0 -ALIGN=15 -MODE=LOCAL -OUTFWT=ptc -NORM=ext -HBAPSIZE=500 -MINLEN=0
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                                                                                                        December 26, 2005, 13:48:48; Search time 282 Seconds (without alignments) 774.752 Million cell updates/sec
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7: /cgn2_6/ptodata/1/pubpna/USIO_NEW_PUB.seq:*

8: /cgn2_6/ptodata/1/pubpna/USIO_NEW_PUB.seq:*

9: /cgn2_6/ptodata/1/pubpna/USIO_NEW_PUB.seq:*

9: /cgn2_6/ptodata/1/pubpna/USIO_NEW_PUB.seq:*

10: /cgn2_6/ptodata/1/pubpna/USIO_NEW_PUB.seq:*
                   GenCore version 5.1.6
(c) 1993 - 2005 Compugen Ltd.
                                                                              nucleic search, using frame_plus_p2n model
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                                                                                                                                                                                                                                                                                                                              4168288 segs, 259477437 residues
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Maximum Match 100%
Listing first 45 summaries
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seq length: 200000000
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2314
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Match Length DB
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Ygapop 10.0,
Fgapop 6.0,
Delop 6.0,
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Total number of

Searched:

Minimum DB Maximum DB

Database

Title: Perfect score:

Sequence:

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Run on:

Scoring table:

13307,

Sequence Sequence

Sequence Sequence

1515 62 32 74 95 18

Length: Matches: Conservative: Mismatches: Indels: Gaps:

0.492 99.00 35.74% 23.57% 4.28%

Percent Similarity:
Best Local Similarity:
Query Match:
DB:

Sequence 5, Appli Sequence 22, Appl Sequence 56907, A Sequence 211, App Sequence 4, Appli Sequence 31179, A Sequence 31179, A Sequence 35, Appli

US-11-073-112-5 US-10-933-025-22 US-10-750-185-56907 VS-11-117-187-211 US-11-073-112-4 US-10-750-185-31179 US-10-750-185-3182 US-11-112-908-36

1515 7 U 268685 6 U 1241 6 U 1082144 7 2177 7 U 1766 6 U

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Alignment Scores:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1119 CCCTAACGGTGTGCCCGACAGCCAGAAGGAGCTG-----TTCGAGCGCGCAGGCTT 1169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1170 CTACATCAACAGCGGCCAATACATTCTTCGTCCCGAAGTCATCGAGÁGĆTTCTACTÁŢGC 1229
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          212 nlysProAsnTyrThrGluIleArgGlnTyrCysAsnHisTrpArgAsnPheAlaAspIl 232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ----AspGlyTyrLysHisMetSerLeuAlaLeuAsnArgThrGly-- 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -----CysGluTrpProLeuTyrMetTrpProPheGl 212
                                                                                                                                                                                                                       ||||:::|||
| Hillisiand | Hilling | 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            151 rTyrAspIleAspAlaGlnThrPheAlaAspTrpGlyValAspLeuLeuLysPheAspGl 171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    171 yCys-----TyrCysAspSerLeuGluAsnLeuAla-------------- 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -----ArgSerIleValTyrSe 201
                                                                                                                                                                                                                                                                                                                                                pCysTrpMetAlaProGlnArgAspSerGluGlyArgLeuGlnAlaAspProGlnArgPh 113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 843 CCGCTGGGTCGCAGCTGCCGAGTCGAGCATCAACCATCTGGCTTCGCACCCGGTCCACCCG 902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             113 eProHisGlyIleArgGlnLeuAlaAsnTyrValHisSerLysGlyLeuLysLeuGlyIl 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       903 CCCA---GACGIGACTITCTIGGCCACTIAC----AACGAGGAGCATCAGCIGGGCT 953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   eTyrAlaAspValGlyAsnLysThrCysAlaGlyPheProGlySerPhe-----GlyTy 151
                                                                                                                     569 CCCGGAGCCAGCCCAGTA--------CAAACCGTTCCCTGGATTGAT 707
                                                                                                                                                                                                                                                                                                    66 GluLysieuPheMetGluMetAlaGluLeuMetValSerGluGlyTrpLys-AspAlaGl 85
                                                                                                                                                                                                                                                                                                                                                                                                                                   85 yTyrGluTyrLeu------CysIleAspAs 93
                                                            27 ProGlyAlaArgAlaLeuAspAsnGlyLeuAlaArgThrProThrMetGlyTrpLeuHis 46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            783 CTACGAGTACCTGATCAAGATGTACGTCTACGATCCCGAACGCTTTGGCCTCTACGGGA
                                                                                                                                                                                 47 TrpGluArgPheMet --- CysAsnLeuAspCysGlnGluGluBroAspSerCysIleSer
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US-10-933-025-22/C
Squence 22, Application US/10933025
Publication No. US20050265987A1
GENERAL INFORMATION:
APPLICANT: ROSEN, STEVEN
APPLICANT: TOMITA, MEGUMI
TITLE OF INVENTION: Sulfotransferases and methods of use
TITLE OF INVENTION: thereof
TITLE OF INVENTION: thereof
CURRENT APPLICATION WUMBER: US/10/933,025
CURRENT FILING DATE: 2004-09-01
PRIOR APPLICATION NUMBER: 10/025,966
PRIOR FILING DATE: 2001-12-21
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US-10-602-219-12 (1-421) x US-11-073-112-5 (1-1515)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             126 SeriysGlyLeuLysLeuGlyIleTyrAlaAspValGlyAsnLysThrCysAlaGlyPhe 145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LeuGlnAlaAspProGlnArgPheProHisGlyIleArgGlnLeuAlaAsnTyrValHis 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   146 ProGlySerPheGlyTyr-----TyrAspIleAspAlaGlnThrPheAlaAspTrp 162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    276 -----SerTrpAsnGlnGlnValThrGln 283
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Matches:
Conservative:
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PRIOR APPLICATION NUMBER: 60/258,577
PRIOR FILING DATE: 2000-12-27
PRIOR APPLICATION NUMBER: 60/267,831
PRIOR PILING DATE: 2001-09-02
NUMBER OF SEQ ID NOS: 26
PSOFTWARE: FastSEQ for Windows Version 4.(6)
SEQ ID NO 22
LENGTH: 268685
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; OTHER INFORMATION: n = A,T,C or G
US-10-933-025-22
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ORGANISM: Homo sapiens
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Best Local Similarity:
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	SerGluLysLeuPheMetGluMetAlaGluLeuMetValSerGluGlyTrpLy ::: ::: : GCCTGGAAACGGGGTGGTGTTTTTGGCGCCTTGAGGAA	GTCCCCTGCAA ProGlnArgPheP		596TGGGGGGGGCTGCTATCCTATCTGACAGATGAAAACCTGGGGGGCTCG 645 181 aAspGlyTyrLysHisMetSerLeualaLeuasnargThrGlyargSerIleValTyrSe 201 [InTyrCysAsnHisTrpArgAsnPheAlaAspIleAspAspSerTrpLysSerIleLysS GTGAGTTGAATCACAAGAGACTGCTGGCT	19TrpAsnAspProAspMetLeuVallleGlyAsnPheGlyLeuSer	294 LeuPheMetSerAsn	
8 8 8 8 8	& & & & &	8 8 8 8	8 & 8 &	8 8 8 8	6 6 6 6	8 6 6 6	8 8 8 8	
Qy 284 MetAlaLeuTrpAlaIleMetAlaAlaProLeuPheMetSerAsnAspLeuArgHisIle 303 bb :::	Oy 341GludrgProLeuSerGlyLeuAlaTrpAlaValAlaMetIleAsnArgGlnGlu 358	366	Qy 384	US-10-750-185-56907 US-10-750-185-56907, Application US/10750185 ; Publication No. US20050260603A1 ; GRWERAL INFORMATION: ; APPLICANT: MMI GENOMICS, INC. ; APPLICANT: MMI SELOMICS, INC. ; APPLICANT: KERR, Richard ; APPLICANT: KOSENFELD, David ; APPLICANT: HOLM TOM TOM	BATES, FANTIN NVENTION ENCE: M PLICATIC LING DATIC	NUMBER OF SEQ ID NOS: 64922 SOFWARE: PatentIN version 3.1 SEQ ID NO 56907 LENGTH: 1241 TYPE: DNA ORGANISM: Bovine 19866881771060	Alignment Scores: Pred. No.: Score: Score 34.00 Matches: Percent Similarity: Best Local Similarity: Query Match: 6 Gaps: 1.44 Matches: 92 Conservative: 45 Best Local Similarity: 20.49\$ Mismatches: 180 DB: 6 Gaps: 1141 Matches: 92 Gaps: 180 US-10-602-219-12 (1-421) x US-10-750-185-56907 (1-1241)	

Db 985 GGCTTCTCACTGCTGGTCCTGGCTTCCCGGGAGCAGCGACTGCAGCGCTGGACC 1041	::: Db 566170 CAA	:::
Qy 341 uArgProLeuSerGlyLeuAlaTrpAlaValAlaMet	Qy 117 Db 566227 CGG	
Qy 354	Qy 130 Lys ::: Db 566287 AGG	LysLeuGlyIleTyrAlaAspValGlyAsnLysThrCysAlaGlyPheProGlySerPhe 149 ::: :: :: :: :: SegrGCCACGTCCAAGCCGT
Qy 361 yProArgSerTyrThr11eAlaValAla 1	Qy 150 Gly Db 566320	GlyTyrTyrAspileAspAlaGlnThrPheAla
Qy 376 lalaCysAsnProAlacys 382 bb 1222 GCCTCTCCCCTAGGTGT 1240	Oy 161 Db 566362 TAT	AspTrpGlyValAspLeuLeuLysPheAspGly 171 TATGTTGCTCTCTATCTATTGATTTGGGAAATCTGCGAATCTTCGTTTTATGCCTGAG 566421
RESULT 4 187-211 108	Qy 172 CysTyrCysAsAsps Db 566422 TGTCTGTGTTACA Qy 192 Asnarg Db 566461 AAAAGTCCTCG Qy 203 GluTTPPROLEUT Db 566509TGGCCTTCTCT Qy 213 LysPrOASNTYTT Db 566566 AAGACGGTTAAGA Qy 227 ArgAsnPhealaA Qy 241 SexTleLeuAspT Db 566626 AGGACTCTTGACT Qy 241 SexTleLeuAspT Db 566626 AGGACTTTAGC Qy 241 SexTleLeuAspT Db 566725	172 CyefytcyalappserLeuGluhanLeuAlaappGlyTyrLysHiaMerSerLeuAlaleu

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Alignment Scores:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                pCysTrpMetAlaProGlnArgAspSerGluGlyArgLeuGlnAlaAspProGlnArgPh 113
                                                                                                                                                                                                                                                                                                                                                                                                  GluLysLeuPheMetGluMetAlaGluLeuMetValSerGluGlyTrpLys-AspAlaGl 85
                                                                                                                                                                                                                                                                                   27 ProGlyAlaArgAlaLeuAspAsnGlyLeuAlaArgThrProThrMetGlyTrpLeuHis 46
                                                                                                                                                                                                                                                                                                                                            47 TrpGluArgPheMet --- CysAsnLeuAspCysGlnGluGluProAspSerCysIleSer
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; Publication No. US20050260603A1
; GENERAL INFORMATION:
; APPLICANT: MI GENOMICS, INC.
; APPLICANT: ROSENFELD, David
; APPLICANT: ROSENFELD, David
; APPLICANT: BOSENFELD, David
; APPLICANT: FANTEN, Stephen
; APPLICANT: FANTEN, Dennis
; TITLE OF INVENTION: COMPOSITIONS FOR INFERRING BOVINE TRAITS
; FILE REFERENCE: MM11100-2
; CURRENT APPLICATION NUMBER: US/10/750,185
; CURRENT FILING DATE: 2003-12-31
; PRIOR APPLICATION NUMBER: US 60/437,482
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23
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                                                                                                                                                        Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
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PRIOR APPLICATION NUMBER: 60/157,341
PRIOR FILING DATE: 1999-10-01
NUMBER OF SEQ ID NOS: 25
SOFTWARE: Patentin version 3.3
SEQ ID NO 4
LENGTH: 2177
TYPE: DNA
ORGANISM: Aspergillus nidulans
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91.50
41.72%
27.61%
3.95%
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Best Local Similarity:
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DB:
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US-10-750-185-31179
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Pred. No.:
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1674 AGGTTCCCAGCCTCGGGACCCCTCAGCTGGTAAGAATC-----CACCTGCAATGCGGG 1727
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; Sequence 35182, Application US/10750185
; Publication No. US20050260603A1
; GENERAL INFORMATION:
; APPLICANT: MMI GENOMICS, INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     197 SerIleValTyrSerCys-----
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                                                                                                                         ; TYPE: DNA
; ORGANISM: Bovine 19866880843346
US-10-750-185-31179
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PRIOR FILING DATE: 2002-12-31
NUMBER OF SEQ ID NOS: 64922
SOFTWARE: PatentIN version 3.1
SEQ ID NO 31179
LENGTH: 2716
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21.15%
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Query Match:
DB:
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77171 CCTCTAGGAACCTCGGGCCGGCAGCACCCGCGGGA------TTCTGCTGCTGCTCCT 77221
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                                      199 ITyrSerCys---GluTrpProLeuTyrMetTrpProPheGlnLysProAsnTyrThrGl 218
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                                                                                                                                                                                                                                            Sequence 36, Application US/11112908
; Publication No. US20050260659A1
; GRENEAL INFORMATION:
; APPLICANT: Harris, Cole
; APPLICANT: Harris, Cole
; TITLE OF INVENTION: Breast Cancer Biomarkers
; TITLE OF INVENTION: Breast Cancer Biomarkers
; CURRENT APPLICATION NUMBER: US/11/112,908
; CURRENT PILING DATE: 2004-04-22
; PRIOR APPLICATION NUMBER: US 60/54,758
; PRIOR PLIING DATE: 2004-04-23
; PRIOR PLIING DATE: 2004-06-01
; PRIOR APPLICATION NUMBER: US 60/631,702
; PRIOR PLIING DATE: 2004-11-30
; PRIOR FILING DATE: 2004-11-30
; RIOR FILING DATE: 2004-12-07
; NUMBER OF SEQ ID NOS: 511
; COOL TO NO NOS: 511
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LOCATION: (49350)..(49350)
OTHER INFORMATION: n is a, c,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     913 TGCCTCCTAGGGGAAAGCAGGCTGGGTAGTGGCGTGACTTCCTAGGAAGAGGGCCACTGG 972
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           102 rGluGlyArgLeuGlnAlaAspProGlnArgPheProHisGlyIleArgGlnLeuAlaAs 122
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                                                                                APPLICANT: HOLM, Tom
APPLICANT: BATES, Stephen
APPLICANT: FANTH, Denples
TITLE OF INVENTION: COMPOSITIONS FOR INFERRING BOVINE TRAITS
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Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                               FILE REFERENCE: MAII100-2
CURRENT APPLICATION NUMBER: US/10/750,185
CURRENT FILING DATE: 2003-12-31
FRIOR APPLICATION NUMBER: US 60/437,482
FRIOR FILING DATE: 2002-12-31
NUMBER OF SEQ ID NOS: 64922
SOFTWARE: PatentIN version 3.1
SOFTWARE: PatentIN version 3.1
LENGTH: 1766
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                                                                                                                                                                                                                                                                                                                                                                                       , ORGANISM: Bovine 19866880928175
US-10-750-185-35182
                                                            ROSENFELD, David
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89.50
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The Richard Dav
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|----CTTCCCTTAGCGGTGGGCCGAGG-----TGG 25427
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APPLICANT: COOKE, MICHAEL, JOHN
APPLICANT: DEBST, MICHAEL, JOHN
APPLICANT: JOBLING, STEPHEN, ALAN
APPLICANT: SAFFORD, RICHARD
APPLICANT: SAFFORD, RICHARD
APPLICANT: SAFFORT, ROGER, JOHN
TITLE OF INVENTION: IMPROVEMENTS IN OR RELATING TO PLANT STARCH COMPOSITION
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1198 GAGCTAGGAATTGTTCTCTATGGACATTGTTCACAGCCATGCATCAAATAATACTTTA 1257
                                                                                                                                                                                                                                                                                                                                                                             380 ProAlaCysPhelleThrGlnLeuLeuProValLysArgLysLeuGlyPheTyrGluTrp 399
                                                                                                                     ProLeu-----SerGlyLeuAlaTrpAlaValAla---MetlleAsnArgGlnGluIle 359
                                                                                                                                                                                                                                                    360 GlyGlyProArgSerTyrThrIleAlaValAlaSerLeuGlyLysGlyValAlaCysAsn 379
ProteuglyLysGlnGlyTyrGlnLeuArgGlnGlyAspAsnPheGluValTrpGluArg 342
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CURRENT FILING DATE: 2005-01-21

PRIOR APPLICATION NUMBER: US/10/056,454

PRIOR APPLICATION NUMBER: PCT/GB96/01075

PRIOR APPLICATION NUMBER: PCT/GB96/01075

PRIOR APPLICATION NUMBER: GB 9607409.1

PRIOR FILING DATE: 1996-04-10

PRIOR PLILING DATE: 1996-04-10

PRIOR APPLICATION NUMBER: GB 9509229.2

PRIOR FILING DATE: 1995-04-10
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 16, Application US/11038284 Publication No. US20050246793A1 GENERAL INFORMATION:
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   ProLeu-----SerGlyLeuAlaTrpAlaValAla---MetIleAsnArgGlnGluIle 359
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Publication No. US20050260559A1
GENERAL INFORMATION:
GENERAL INFORMATION:
TITLE OF INVENTION:
FILE REPERENCE: 04-164-US
CURRENT APPLICATION NUMBER: US/11/112,908
CURRENT FILING DATE: 2005-04-22
PRIOR PAPLICATION NUMBER: US 60/564,758
PRIOR PILING DATE: 2004-04-03
PRIOR PILING DATE: 2004-06-01
PRIOR APPLICATION NUMBER: US 60/575,978
PRIOR FILING DATE: 2004-06-01
PRIOR APPLICATION NUMBER: US 60/631,702
PRIOR PILING DATE: 2004-11-30
PRIOR PILING DATE: 2004-11-30
PRIOR PILING DATE: 2004-11-30
PRIOR FILING DATE: 2004-11-30
PRIOR FILING DATE: 2004-11-30
SUFUMBER OF SEQ ID NOS: 511
SOFTWARE PARENTIN VERSION 3.3
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APPLICANT: Wang, Elizabeth
APPLICANT: Chen, C. M. Amy
APPLICANT: Chen, S. Even M.
ITILE OF INVENTION: METHODS OF PROMOTING CARDIAC CELL
TITLE OF INVENTION: PROLIFERATION
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CURRENT APPLICATION NUMBER: US/11/108,528
CURRENT FILING DATE: 2005-04-18
PRIOR APPLICATION NUMBER: US 60/563,137
PRIOR FILING DATE: 2004-04-16
PRIOR PRIOR APPLICATION NUMBER: US 60/598,368
PRIOR FILING DATE: 2004-08-02
NUMBER OF SEQ ID NOS: 86
SOFTWARE: PastSEQ for Windows Version 4.0
SEQ ID NO 8501
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Query Match:
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APPLICANT: 3AFFORD, RICHARD
APPLICANT: SAFFORD, RICHARD
APPLICANT: SAFFORD, RICHARD
APPLICANT: SAFFORD, CHRISTOPHER, MICHAEL
APPLICANT: WESTCOTT, ROGER, JOHN
TITLE OF INVENTION: IMPROVEMENTS IN OR RELATING TO PLANT STARCH COMPOSITION
TITLE OF INVENTION: IMPROVEMENTS IN OR RELATING TO PLANT STARCH COMPOSITION
FILE REPERENCE: 04416-3-5003-018
CURRENT FILING DATE: 2005-01-24
FRIOR PAPLICATION NUMBER: US/10/056,454
FRIOR PAPLICATION NUMBER: PCT/GB96/01075
FRIOR APPLICATION NUMBER: GB 9607409.1
FRIOR APPLICATION NUMBER: GB 9607409.1
FRIOR APPLICATION NUMBER: GB 9509229.2
FRIOR FILING DATE: 1996-04-10
FRIOR FILING DATE: 1998-04-10
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      1258 GATGGACTGAACATGTTTGACGGCACCGATAGTTGTTACTTTTCACTCTGGAGCTCGTGGT 1317
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                                                                                                                                   160 -----AlaAspTrpGlyValAspLeuLeuLysPheAspGlyCysAsp
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                                                151 TyrTyrAspIle --- AspAlaGlnThrPhe ----
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APPLICANT: DEBET, MARTINE
APPLICANT: GIDLEY, MICHAEL, JOHN
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US-11-038-284-19
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APPLICANT: BATES, Stephen
TITLE OF INVENTION: COMPOSITIONS FOR INFERRING BOVINE TRAITS
FILE REFERENCE: MMI1100-2
CURRENT APPLICATION NUMBER: US/10/750,185
CURRENT FILING DATE: 2003-12-31
PRIOR APPLICATION NUMBER: US 60/437,482
PRIOR FILING DATE: 2002-12-31
NUMBER OF SEQ ID NOS: 64922
SOFTWARE: PATENTIN VETSION 3.1
SEQ ID NOS: 65032
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Sequence 55673, Application US/10750185
Publication No. US20050260603A1
GENERAL INFORMATION:
APPLICANT: MMI GENOMICS, INC.
APPLICANT: DeNISE, Sue K.
APPLICANT: RERR, Richard
APPLICANT: ROSENFELD, David
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US-10-750-185-55673
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Best Local Similarity:
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DB:
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427 CGTGAACAAGTC-----AAGGGGTGGAAAGGC------TTATTTTGCACT 465
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             112 ArgPheProHisGlyIleArgGlnLeuAlaAsnTyrValHisSerLysGlyLeuLysLeu 131
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            72 MetAlaGluLeuMetValSerGluGlyTrpLysABspAlaGlyTyrGluTyrLeuCysIle 91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               32 LeuaspasnGlyLeualaargThrProThrMetGlyTrpLeuHisTrpGluargPheMet 51
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                                             RESULT 15
US-11-073-626-4

i Sequence 4, Application US/11073626

i Publication No. US20050244926A1

i GENERAL INFORMATION:

APPLICANT: KUROSAWA, KEIKO

APPLICANT: HROKAWA, KOZO

ITLE BOF INVENTION: NOVEL fructosyl peptide oxidase

FILE REPERENCE: 22759UGS

CURRENT APPLICATION NOWBER: US/11/073,626

CURRENT APPLICATION NOWBER: US/10/232,655

PRIOR APPLICATION NUMBER: US/10/232,655

PRIOR APPLICATION NUMBER: US/10/232,655

PRIOR PILING DATE: 2001-09-04

PRIOR FILING DATE: 2001-09-04

PRIOR FILING DATE: 2001-12-12

PRIOR PILING DATE: 2001-12-12

PRIOR PILING DATE: 2001-12-12

PRIOR PILING DATE: 2002-08-06

NUMBER OF SEQ ID NOS: 24

SEQ ID NO4

I LENGTH: 1314

TYPE: DNA

TYPE: DNA

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463 CCCTCTTCTTGCTCCAGCTCTGTGTTGGGACCTGGCT 501
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Matches:
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Mismatches:
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Sequence 11, Application US/0993059

Publication No. US20020088024A1

GENERAL INFORMATION:

GENERAL INFORMATION:

APPLICANT: GARGER, Stephen A.

APPLICANT: TURPEN, Thomas H.

APPLICANT: KUMAGAI, Monto H.

TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN

TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN

FILE REFERENCE: 008010087CPUS06

CURRENT APPLICATION NUMBER: US/09/993,059

CURRENT ATLING DATE: 2001-11-13

NUMBER OF SEQ ID NOS: 37

SOFTWARE: FastSEQ for Windows Version 4.0

SEQ ID NO 11
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Matches:
Conservative:
Mismatches:
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Gaps:
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   TYPE: DNA
ORGANISM: Homo sapiens
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US-09-993-059-11
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Copyright (c) 1993 - 2005 Compugen Ltd.
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US-10-602-220-11
US-10-984-389-11
US-10-984-389-11
US-09-993-059-7
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Maximum Match 100%
Listing first 45 summaries
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Ygapop 10.0 , Ygapext
Fgapop 6.0 , Fgapext
Delop 6.0 , Delext
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Maximum DB seq length: 2000000000
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Sequence 11, Application US/10103327
Fublication No. US20030106095A1
GENERAL INFORMATION:
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: GRAGER, Stephen A.
APPLICANT: KUNAGAI, Monto H.
TITLE OF INVENTION: PRODUCTION OF LYSOSOWAL ENZYMES IN
TITLE OF INVENTION: PRANTS BY TRANSIENT EXPRESSION
FILE REFERENCE: 008010087CPUSO6
CURRENT APPLICATION NUMBER: US/09/993,059
PRIOR APPLICATION NUMBER: US/09/993,059
PRIOR FILING DATE: 2001-11-13
NUMBER OF SEQ ID NOS: 37
SOFTWARE: PASSESQ for Windows Version 4.0
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GENERAL INFORMATION:
APPLICANT: Large Scale Biology Corporation
APPLICANT: Turge, Thomas H.
APPLICANT: Turgen, Thomas H.
APPLICANT: Erwin, Robert L.
APPLICANT: Erwin, Robert L.
APPLICANT: Grill, Laurence K.
TITLE OF INVENTION: PRODUCTION OF LXSOSOMAL BNZ
FILE REFERENCE: LSBC-0087-0709B
CURRENT FILING DATE: 2003-06-23
PRIOR APPLICATION NUMBER: 09/93,059
PRIOR FILING DATE: 2001-11-13
PRIOR APPLICATION NUMBER: 09/316,572
PRIOR FILING DATE: 1999-05-21
PRIOR PILING DATE: 1999-05-21
PRIOR PILING DATE: 1999-10-14
PRIOR FILING DATE: 1999-10-14
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PRIOR FILING DATE: 1993-12-29
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PRIOR PILING DATE: 1993-10-30
PRIOR PILING DATE: 1993-01-30
PRIOR PILING DATE: 1992-07-31
PRIOR PILING DATE: 1992-07-31
PRIOR APPLICATION NUMBER: 07/600,244
PRIOR PILING DATE: 1992-07-31
PRIOR PILING DATE: 1990-10-22
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                                                            AspTrpGlyValAspLeuLeuLysPheAspGlyCysTyrCysAspSerLeuGluAsnLeu
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    361 GCTAATTATGTTCACAGCAAAGGACTGAAGCTAGGGATTTATGCAGATGTTGGAAATAAA
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US-10-602-220-11
Sequence 11, Application US/10602220
Publication No. US20040023281A1
GENERAL INFORMATION:
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APPLICANT: Erwin, Robert L.
APPLICANT: Grill Laurence K.
TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN PLANTS BY TRANIENT EXPRESSION FILE REFERENCE: L58C-0087-CPON OF LYSOSOMAL ENZYMES IN PLANTS BY TRANIENT EXPRESSION FILE REFERENCE: L58C-0087-CPON OF LYSOSOMAL ENZYMES IN PLANTS BY TRANIENT EXPRESSION CURRENT APPLICATION NUMBER: 09/993,059
PRIOR PLING DATE: 2001-11-13
PRIOR PLING DATE: 2001-0-7-26
PRIOR APPLICATION NUMBER: 09/116,572
PRIOR APPLICATION NUMBER: 09/116,572
PRIOR PLING DATE: 1999-05-11
PRIOR PLING DATE: 1999-10-14
PRIOR PLING DATE: 1999-12-30
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                       ThrCygAlaGlyPheProGlySerPheGlyTyrTyrAsp1leAspAlaGlnThrPheAla
                                                                               TCCTGTGAGTGGCCTCTTTATATGTGGCCCTTTCAAAAGCCCAATTATACAGAAATCCGA
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                                                                        SerCysGluTrpProLeuTyrMetTrpProPheGlnLysProAsnTyrThrGluIleArg
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UG-10-651-388-11
; Sequence 11, Application US/10851388
; Publication No. US20040234516A1
; GENERAL INFORMATION:
; APPLICANT: GARGER, Stephen A.
; APPLICANT: TURPEN, Thomas H.
; APPLICANT: TURPEN, Monto H.
; TITLE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION
; TITLE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION
; FILE REFERENCE: 008010087CPUSO6
; CURRENT APPLICATION NUMBER: US/10/851,388
; CURRENT FILING DATE: 2004-05-21
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PRIOR APPLICATION NUMBER: US/09/993,059
PRIOR FILING DATE: 2001-11-13
NUMBER OF SEQ ID NOS: 37
SOFTWARE: FastSEQ for Windows Version 4
SEQ ID NO 11
LENGTH: 1266
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                                                                                       TYPE: DNA ORGANISM: Homo sapiens
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Pred. No.:
Score:
Percent Similarity: 1
Best Local Similarity: 1
Query Match: 8
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         ThrCygalaGlyPheProGlySerPheGlyTyrTyrAspIleAspAlaGlnThrPheAla
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                                                               RESULT 8
US-10-103-327-7
; Sequence 7, Application US/10103327
; Publication No. US20030106095A1
; GENERAL INFORMATION:
APPLICANT: GRACER, Stephen A.
; APPLICANT: TURPEN, Thomas H.
; APPLICANT: KUMAGAI, Monto H.
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US-09-933-059-7
i Sequence 7, Application US/0993059
i Publication No. US20020088024A1
i GENERAL INFORMATION:
APPLICANT: GARGER, Stephen A.
APPLICANT: TURREN, Thomas H.
APPLICANT: KUMAGAI, MONICO H.
ITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN TITLE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION FILE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION CURRENT FILING DATE: 2001-11-13
NUMBER OF SEQ ID NOS: 37
SOFTWARE: PSELSEQ for Windows Version 4.0
SEQ ID NO 7
LENGTH: 1278
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; ORGANISM: Homo sapiens
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (1)...(1275)
US-09-993-059-7
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Best Local Similarity:
Query Match:
DB:
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Pred. No.:
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## APPLICANT: Large Scale Biology Corporation
### APPLICANT: Large Scale Biology Corporation
### APPLICANT: Large Scale Biology Corporation
### APPLICANT: Turpen, Thomas H.
### APPLICANT: Pogue, Gregory P.
### APPLICANT: Brwin, Robert L.
### APPLICANT: Brwin, Robert L.
### APPLICANT: Brwin, Robert L.
### APPLICANT: Brwin, Robert L.
### APPLICANT: Grill, Laurence K.
### TITLE OF INVENTION: PRODUCTION OF LYSOSOWAL ENZYMES IN PLANTES BY TRANIENT EXPRESSION
### CURRENT PILING DATE: 2003-06-23
### CURRENT PILING DATE: 2001-11-13
### PRIOR PILING DATE: 2000-07-26
### PRIOR APPLICATION NUMBER: 09/93, 639
### PRIOR PILING DATE: 1999-05-21
### PRIOR PILING DATE: 1999-05-21
### PRIOR PILING DATE: 1999-01-14
### PRIOR PILING DATE: 1999-05-39
### PRIOR PILING DATE: 1999-01-14
### PRIOR PILING DATE: 1992-12-30
### PRIOR PILING DATE: 1992-12-30
### PRIOR PILING DATE: 1994-01-19
### PRIOR PILING DATE: 1994-01-19
### PRIOR FILING DATE: 1992-07-31
### PRIOR FILING DATE: 1992-07-31
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Publication No. US20040016021A1
GENERAL INFORMATION:
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; TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN TITLE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION FILE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION CURENT APPLICATION NUMBER: US/10/103,327 CURRENT FILING DATE: 2002-03-20 PRIOR APPLICATION NUMBER: US/09/993,059 PRIOR APPLICATION NUMBER: US/09/993,059 NUMBER OF SOL ID NOS: 37 SOFTWARE: Fast SO ID NOS: 37 SOFTWARE: Fast SO for Windows Version 4.0
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Matches:
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Best Local Similarity:
Query Match:
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; NAME/KEY: CDS
; LOCATION: (1).
US-10-103-327-7
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Pred. No.:
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GENERAL INFORMATION:

APPLICANT: Large Scale Biology Corporation
APPLICANT: Large Scale Biology Corporation
APPLICANT: Largen, Thomas H.

APPLICANT: Turpen, Thomas H.

APPLICANT: Erwin, Robert L.
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APPLICANT: Erwin, Robert L.

APPLICANT: Erwin, Robert L.

APPLICANT: Erwin, Robert L.

APPLICANT: Erwin, Robert L.

APPLICANT: Erwin, Robert L.

APPLICANT: OR INTERNICATION OF LINEAR STANIENT EXPRESSION
FILE REFERENCE: LSEC-0087-CP078

CURRENT FILING DATE: 2003-06-23

PRIOR APPLICATION NUMBER: 09/933,059

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PRIOR APPLICATION NUMBER: 09/16,572

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PRIOR FILING DATE: 1994-01-19

PRIOR FILING DATE: 1994-01-19

PRIOR FILING DATE: 1994-01-19

PRIOR FILING DATE: 1994-01-19

PRIOR FILING DATE: 1994-01-19

PRIOR FILING DATE: 1992-07-31

PRIOR FILING DATE: 1991-01-19

PRIOR FILING DATE: 1991-01-19

PRIOR FILING DATE: 1991-01-16

PRIOR PILING DATE: 1991-01-16

PRIOR PILING DATE: 1991-01-16

PRIOR PILING DATE: 1991-01-16
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                                                                                                                                            1081 GGACCTCGCTCTTATACCATCGCAGTTGCTTCCCTGGGTAAAGGAGTGGCCTGTAATCCT
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    721 AGTATCTTGGACTGGACATCTTTTAACCAGGAGAATTGTTGATGTTGCTGGACCAGGG
                                         ValThrGlnMetAlaLeuTrpAlaIleMetAlaAlaProLeuPheMetSerAsnAspLeu
                                                                                                                                                                                                                                                                                                                                                             GluArgProLeuSerGlyLeuAlaTrpAlaValAlaMetIleAsnArgGlnGluIleGly
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PRIOR APPLICATION NUMBER: 07/600,244
PRIOR FILING DATE: 1990-10-22
PRIOR PILING DATE: 1990-10-22
PRIOR PILING DATE: 1991-01-16
Remaining Prior Application data removed - 5
NUMBER OF SEQ ID NOS: 32
SEQ ID NO 7
LENGTH: 1278
TYPE: DNA
ORGANISM: Homo sapiens
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                                                                                                                                                                          1021 GAACGACCTCTCAGGCTTAGCCTGGGCTGTAGCTATGATAAACCGGCAGGAGATTGGT
                                                                                                                                                                                                                                                                      ValThrGlnMetAlaLeuTrpAlaIleMetAlaAlaProLeuPheMetSerAsnAgDLeu
                                              Graactcagarggcccrcrggcrarcarggcrgcrccrrrarrcargrcraargaccrc
                                                                                                                                                              GluargProLeuSerGlyLeuAlaTrpAlaValAlaMetIleAsnArgGlnGluIleGly
                                                                                                                                                                                                                                                          AlaCysPhelleThrGlnLeuLeuProValLysArgLysLeuGlyPheTyrGluTrpThr
                                                                                                                                                                                                                                                                                                      SerArgLeuArgSerHisIleAsnProThrGlyThrValLeuLeuGlnLeuGluAsnThr
                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 7, Application US/10851388

Sequence 7, Application US/10851388

Publication No. US20040234516A1

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APPLICANT: GRAGER, Stephen A.
APPLICANT: TURBEN, THOMAS H.
TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES IN TITLE OF INVENTION: PRATYS BY TRANSIENT EXPRESSION FILE REFERENCE: 008010097C9506

CURRENT APPLICATION NUMBER: US/10/851,388

CURRENT FILING DATE: 2004-05-21

PRIOR APPLICATION NUMBER: US/99/993,059

PRIOR FILING DATE: 2001-11-13

NUMBER OF SEQ ID NOS: 37

SOFTWARE: PASLEGE for Windows Vergion 4.0

SEQ ID NO 7

LENGTH: 1278
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; Remaining Prior Application data ren; NUMBER OF SEQ ID NOS: 32; SOFTWARE: PatentIn version 3.2; SEQ ID NO 7; LENGTH: 1278; TYPE: DNA; TYPE: DNA; CRGANISM: Homo sapiens
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 FILE REFERENCE: 008010087CPUSO6
CURRENT APPLICATION NUMBER: US/09/993,059
CURRENT FILING DATE: 2001-11-13
NUMBER OF SEQ ID NOS: 37
SOFTWARE: FASISEQ for Windows Version 4.0
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Publication No. US20020088024A1
GENERAL INFORMATION:
APPLICANT: GARGER, Stephen A.
APPLICANT: TURPEN, Thomas H.
APPLICANT: RUMAGAI. Monto H.
TITLE OF INVENTION: PRODUCTION OF LYSOSOMAL ENZYMES.
TITLE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION
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                                                                 GlyTrpAsnAspProAspMetLeuValIleGlyAsnPheGlyLeuSerTrpAsnGlnGln 280
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                       MetGlnLeuArgAsnProGluLeuHisLeuGlyCysAlaLeuAlaLeuArgPheLeuAla
  US-10-602-219-12 (1-421) x US-10-103-327-13 (1-1284)
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                                                  GGTTGGAATGACCCAGATATGTTAGTGATTGGCAACTTTGGCCTCAGCTGGAATCAGCAA
                                                                                ValThrGlnMetAlaLeuTrpAlaIleMetAlaAlaProLeuPheMetSerAsnAspLeu
                                                                                           GTAACTCAGATGGCCCTCTGGGCTATCATGGCTGCTCCTTTATTCATGTCTAATGACCTC
                                                                                                                                            CGACACATCAGCCCTCAAGCCAAAGCTCTCCTTCAGGATAAGGACGTAATTGCCATCAAT
                                                                                                                                                                                                                      GluArgProLeuSerGlyLeuAlaTrpAlaValAlaMetIleAsnArgGlnGluIleGly
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                                                                                                                                                                                                                                                                                                                             GCCTGCTTCATCACACACACACCTCCTGTGAAAAGAAAGCTAGGGTTCTATGAATGGAACT
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Sequence 13, Application US/10103327

Sequence 13, Application US/10103327

Publication No. USZ0030106095A1

GENERAL INFORMATION:
APPLICANT: GARGER, Stephen A.
APPLICANT: TUREN, Thomas H.
APPLICANT: KUMAGAI, Monto H.
TITLE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION
TITLE OF INVENTION: PLANTS BY TRANSIENT EXPRESSION
FILE REFERENCE: 00010087CPUS06
CURRENT APPLICATION NUMBER: US/10/103,327
CURRENT FILING DATE: 2002-03-20
PRIOR APPLICATION NUMBER: US/09/993,059
PRIOR FILING DATE: 2001-11-13
NUMBER OF SEQ ID NOS: 37

SEQ ID NO 13
LENGTH: 1284
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Matches:
Conservative:
Mismatches:
Indels:
Gaps:
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ORGANISM: Homo sapiens
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Best Local Similarity:
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NAME/KEY: CDS
LOCATION: (1).
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US-10-103-327-13
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Pred. No.:
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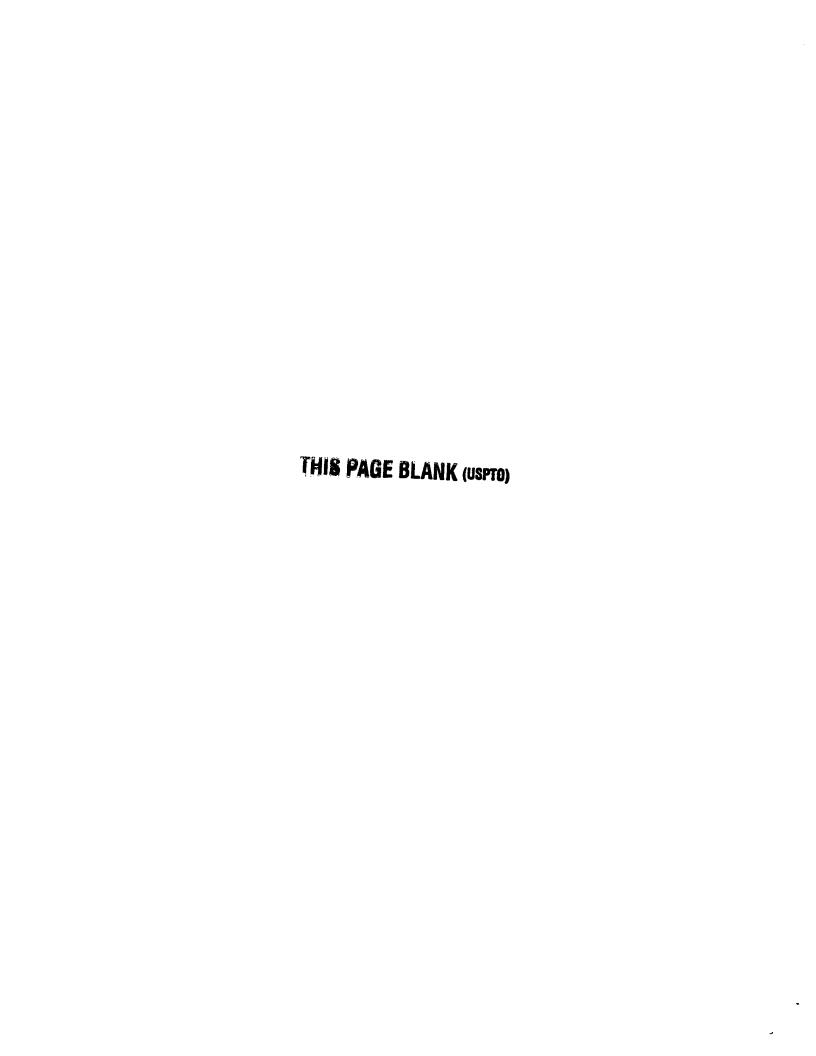
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us-10-602-219-12.p2n.rnpbm

Oy 21 LeuValSerTrpAspIleProGlyAlaArgAlaLeuAspAsnGlyLeuAlaArgThrPro 40	241	Db 1081 GGACCTCGTTTTTTTTTTCCTGGGTAAAGGAGTGGCTGTAATCT 1140
Qy 361 GlyProArgSerTyrThrIleAlaValAlaSerLeuGlyLysGlyValAlaCysAsnPro 380 Db 1081 GGACCTCGCTCTTATACCATCGCAGTTGCTTCCCTGGGTAAGGCCTGTAATCCT 1140 Qy 381 AlaCysPheileThrGlnLeuLeuLeuDroValLySArGLySLeuGlyPheTyrGluTrpThr 400 Db 1141 GCTGCTTCATCACCAGGCTCCTCTGTGAAAGGAAGGTAGGT	A. A. A. A. A. A. A. A. A. A. A. A. A. A	UV 1 MetGanneurgashrrogineuhisbeudiyoysalabedalaredargphebenala 20



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Scoring table:

Minimum DB Maximum DB

Searched:

Perfect score:

Sequence:

OM protein

Run on:

AGENCOURT 602728627 601440703

ILLUMIGEN ALS77581

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- Web : www.genoscope.cns.fr)

1st strand cDNA was primed with a Not1-oligo(dT) primer. Five prime end enriched, double-strand cDNA was digested with Not I and cloned into the Not I and EcoR V sites of the pCWWSPORT 6 vector. Library was normalized. Library was constructed by Life Technologies, a division of Invitrogen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           linear HTC 21-JUL-2004
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Submitted (20-JUL-2004) Genoscope - Centre National de Sequencage
BP 191 91006 EVRY cedex - FRANCE (E-mail : segref@genoscope.cns.fr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Contact : Feng Liang Email : fliang@lifetech.com URL : http://fulllength.invitrogen.com/ InVitroGen Corporation 1600
                                                                                      AY408542 N
CO645672 III
CT005156 CI
CT005156 CI
CT005156 CI
CO646251 II
BO956043 AK
BUS96043 AK
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full-length cDNA clone CS0DB008YB11 of Neuroblastoma Cot
10-normalized of Homo sapiens (human).
                      ALS52630 ABM564282 BQ062192 CO645623 ALS77581
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1 (bases 1 to 1277)
Li,W.B., Gruber,C., Jessee,J. and Polayes,D.
Full-length CDNA libraries and normalization
Unpublished
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-DESCT 1/USPTO spool p/US10602219/Tunat 23122005 151142 17149/app query.fasta_1.583
-DB=EST -QPMT=fastap -SUFFTX=pln.rst -MINMATCH=0.1 -LOOPCI=0 -LOOPEXT=0
-UNITS=bits -GTART=1 -END=-1 -MATRIX=blosum62 -TRANS=human40.cdi -LIST=45
-DOCALIGN=200 -THR_SCORE=pct -THR_MAX=100 -TR_MINN=0 -ALIGN=15 -MODE=LOCAL
-OOTHOW=pcto -NORM=ext -HEAPSIZE=500 -MINLEN=0 -MAXIEN=200000000
-USRE=US10602219 @CGN 1 1 8010 @runat 2312205 151142 17149 -NCFU=6 -ICPU=3
-NO_MMAP -LARGEQUERY -NEG_SCORES=0 -MAIT -DSPBALCK=100 -LONGLOG
-DEV_TIMEOUT=120 -WARN TIMEOUT=30 -THREADS=1 -KGAPOP=10 -KGAPEXT=0.5 -FGAPOP=6
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AY408540 Homo sapi
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            GenCore version 5.1.6
(c) 1993 - 2005 Compugen Ltd.
                                                                 nucleic search, using frame_plus_p2n model
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Listing first 45 summaries
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Fgapop 6.0 , Fgapext
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Database :

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Result Š. 2314 2309 2289 2104 2055 1811

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AGENCOURT

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Submitted (20-JUL 2004) Genoscope - Centre National de Sequencage : Submitted (20-JUL 2004) Genoscope - Centre National de Sequencage : PP 191 91006 EVRY cedex - FRANCE (E-mail : seqref@genoscope.cns.fr - Web : www.genoscope.cns.fr) and ist strand cDNA was primed with a NotI-oligo(dT) primer. Five prime end enriched, double-strand cDNA was digested with Not I and cloned into the Not I and EcoR V sites of the pcMVSPORT 6 vector. Library was normalized. Library was constructed by Life Technologies, a division of Invitrogen.
                                                                                                                                                                                                                                                                                                                                                                                             1089
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1. (bases 1 to 1266)

Li, W.B., Gruber, C., Jessee, J. and Polayes, D.

Full-length cDNA libraries and normalization
Unpublished
GETTGGAATGACCCAGATATGTTAGTGATTGGCAACTTTGGCCTCAGCTGGAATCAGCAA
                                                                                                                                                                 ArgHisIleSerProGlnAlaLysAlaLeuLeuGlnAspLysAspValIleAlaIleAsn
                                                                                                                                                                                                                                                        GlnAspProLeuGlyLysGlnGlyTyrGlnLeuArgGlnGlyAspAsnPheGluValTrp
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http://fulllength.invitrogen.com/ InVitroGen Corporation 1600
Faraday Avenue
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HTC; CNSLT_cDNA.
Homo sapiens (human)
Homo sapiens
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Matches:
Conservative:
Mismatches:
Indels:
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Direct Submission
Submitted (20-JUL-2004) Genoscope - Centre National de Sequencage :
Submitted (20-JUL-2004) Genoscope - Centre National de Sequencage :
BP 191 91006 EVRY cedex - FRANCE (E-mail : seqref@genoscope.cns.fr
- Web : www.genoscope.cns.fr)
1st strand cDNA was primed with a NotI-oligo(dT) primer. Five prime end enriched, double-strand cDNA was digested with Not I and cloned into the Not I and EcoR V sites of the pCMVSPORT 6 vector. Library was normalized. Library was constructed by Life Technologies, a division of Invircogen.

Location/Qualifiers
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1 (bases 1 to 1253)

1 Li, W B., Gruber, C., Jessee, J. and Polayes, D. Pull-length cDNA libraries and normalization
Unpublished

Contact: Feng Liang Email: fliangelifetech.com URL:

Paraday Avenue.

2 (bases 1 to 1253)
AlaCysPhelleThrGlnLeuLeuProValLysArgLysLeuGlyPheTyrGluTrpThr
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Matches:
Conservative:
Mismatches:
Indels:
Gaps:
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                                                                                                                                                                                                                                                         CR617861
CR617861.1 GI:50498668
HTC; CNSLT CDNA.
HOMO SADIENB (human)
HOMO SADIENB
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VERSION
KEYWORDS
SOURCE
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Pred. No.:
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AUTHORS
TITLE
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                                 1266
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                                  Length:
Matches:
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Mismatches:
Indels:
Gaps:
                                                                                              (1-1266)
/plasmid="pCMVSPORT_6"
                                                                                              US-10-602-219-12 (1-421) x CR607242
                                2.27e-242
2309.00
100.00%
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                                               Percent Similarity:
Best Local Similarity:
Query Match:
DB:
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Homo sapiens GLA gene, VIRTUAL TRANSCRIPT, partial sequence,
genomic survey sequence.
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1 (Dases 1 to 1290)

Clark, A.G., Glanowski, S., Nielson, R., Thomas, P., Kejariwal, A., Ferriera, S., Wang, G., Zheng, X.H., White, T.J., Sninsky, B., Adams, M.D. and Cargill, M.
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(Dases 1 to 1290)

Clark, A.G., Glanowski, S., Nielson, R., Thomas, P., Kejariwal, A.,
Clark, A.G., Glanowski, S., Nielson, R., Lu, F., Murphy, B.,
Todd, M.A., Tanenbaum, D.M., Civello, D.R., Lu, F., Murphy, B.,
Ferriera, S., Wang, G., Zheng, X.H., White, T.J., Sninsky, J.J.,
Adams, M.D. and Cargill, M.
Direct Submission
Submitted (16-NOV-2003) Celera Genomics, 45 West Gude Drive,
Rockville, MD 20850, USA
This sequence was made by sequencing genomic exons and ordering
them based on alignment.
Location/Qualifiers
                                    1086 GGACCTCGCTCTTATACCATCGCAGTTGCCTTGCGTAAAGGAGTGGCCTGTAATCCT
                                                                                                          1146 GCCTGCTTCATCACACCTCCCTGTGAAAAGGAAGCTAGGGTTCTATGAATGGACT
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                  GlyProArgSerTyrThr1leAlaValAlaSerLeuGlyLysGlyValAlaCysAsnPro
                                                                                      AlaCysPheIleThrGlnLeuLeuProValLysArgLysLeuGlyPheTyrGluTrpThr
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Matches:
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/mol_type="genomic DNA"
/db_xref="taxon:9606"
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AK054547 Mus musculus 2 days pregnant adult female ovary CDNA, RIKEN full-length enriched library, clone:E330039P08 product:galactosidase, alpha, full insert sequence. AK054547 AK054547.1 GI:26344324 HTC; CAP trapper. Mus musculus (house mouse) Mus musculus (house mouse) Mus musculus Bukaryota; Marajas, Marmalia; Butheria; Butheria; Butheria; Butheria; Butheria; Butheria;	Carninci, P. and Hayashizaki, Y. Carninci, P. and Hayashizaki, Y. High-efficiency full-length cDNA cloning Meth. Enzymol. 303, 19-44 (1999) 10349636 Carninci, P., Shibata, Y., Hayatsu, N., Sugahara, Y., Shibata, K., Itch, M., Konno, H., Okazaki, Y., Muramatsu, M. and Hayashizaki, Y. Normalization and subtraction of cap-trapper-selected cDNAs to prepare full-length cDNA libraries for rapid discovery of new genes denome Res. 10 (10), 1617-1630 (2000)	Shibata, K., Itoh, M., Aizawa, K., Nagaoka, S., Sasaki, N., Carninci, P., Shibata, K., Itoh, M., Tashiro, H., Ttoh, M., Sumi, N., Ishii, Y., Nakamura, S., Hazama, M., Nishine, T., Harada, A., Yamamoto, R., Matsumoto, H., Sakaguchi, S., Ikegami, T., Kashiwagi, K., Yamawoto, R., Inoue, K., Togawa, Y., Izawa, M., Ohara, E., Watahiki, M., Yoneda, Y., Ishikawa, T., Ozawa, K., Tanaka, T., Matsuura, S., Kawai, J., Okazaki, Y., Muramatsu, M., Inoue, Y., Kira, A. and Hayashizaki, Y. RIKEN integrated sequence analysis (RISA) system384-format Genome Res. 10 (11) 1157-11771 (2000)	The RIKEN Genome Exploration Research Group Phase II Team and the FANTOM Consortium. Functional annotation of a full-length mouse cDNA collection Nature 409, 685-690 (2001)	The FANION CONSOLTAINE and the KIALN GENOME EXPLOIDED RESERVED. Group Phase I & II Team. Analysis of the mouse transcriptome based on functional annotation of 60,770 full-length CDNAs Nature 420, 563-573 (2002) 6 (bases I to 1376) Adachi,J., Aizawa,K., Akimura,T., Arakawa,T., Bono,H., Carninci,P., Pukuda,S., Puruno,M., Hanagaki,T., Hara,A., Hashizame,W., Hayashida,K., Hayatsu,N., Hiramoto,K., Hiracka,T., Hirozane,T., Hori,F., Imotani,K., Ishii,Y., Itoh,M., Kagawa,I., Kasukawa,T.,	Katoh, H., Kawai, J., Kolma, Y., Kondo, S., Konda, M., Koya, S., Kurihara, C., Matsuyama, T., Miyazaki, A., Murata, M., Nakamura, M., Nishi, K., Nomura, K., Numazaki, R., Ohno, M., Ohsato, N., Okazaki, Y., Saitoh, H., Sakai, C., Sakai, K., Sakazume, N., Sano, H., Sasaki, D., Shibata, K., Shinayawa, A., Shiraki, T., Sogabe, Y., Tagami, M., Tagama, A., Takahashi, F., Takaku-Akahira, S., Takeda, Y., Tanaka, T., Tomaru, A., Toya, T., Yasunishi, A., Muramatsu, M. and Hayashizaki, Y. Direct Submission Submitted (16-JUL-2001) Yoshihide Hayashizaki, The Institute of Physical and Chemical Research (RIKSM), Laboratory for Genome Exploration Research Group, RIKEN Genomics Sciences Center (GSC),	RIKEN Yokohama Institute; 1-7-22 Suehiro-cho, Tsurumi-ku, Yokohama, Kanagawa 230-0045, Japan (E-mail:genome-rese@gsc.riken.jp, Yokohama, URL:http://genome.gsc.riken.jp/, Tel:81-45-503-9222, Fax:81-45-503-9216) cDNA library was prepared and sequenced in Mouse Genome Encyclopedia Project of Genome Exploration Research Group in Riken
RESULT 6 AK054547 LOCUS DEFINITION ACCESSION VERSION KEYWORDS SOURCE ORGANISM	REFERENCE AUTHORS TITLE JOHNNAL PUBMED REFERENCE AUTHORS TITLE JOURNAL	REPERENCE AUTHORS TITLE	PUBMED REFERENCE AUTHORS TITLE JOURNAL REFERENCE ATHORS	AUTHORS TITLE JOURNAL REFERENCE AUTHORS	TITLE	COMMENT
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Genomic Sciences Center and Genome Science Laboratory in RIKEN. Division of Experimental Animal Research in Riken contributed typepare mouse tissues.

Please visit our web site for further details.

URL:http://genome.gsc.riken.jp/.

URL:http://fantom.gsc.riken.jp/.
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Mus musculus 0 day neonate thymus cDNA, RIKEN full-length enriched library, clone:A430057F16 product:galactosidase, alpha, full insert sequence.
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HTC; CAP trapper.
HTCs CAP trapper.
Mus musculus (house mouse)
Mus musculus
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                                                                                                                                                                                                                                                                     Shibata, K., Itoh, M., Aizawa, K., Nagaoka, S., Sasaki, N., Carninci, P., Konno, H., Akiyama, J., Nishi, K., Kitsunai, T., Tashiro, H., Itoh, M., Sumi, N., Ishii, Y., Nakamura, S., Hazama, M., Nishine, T., Harada, A., Yamamoto, R., Matsumoto, H., Sakaguchi, S., Ikegami, T., Kashiwagi, K., Yujiwake, S., Inoue, K., Togawa, Y., Izawa, M., Ohara, E., Watahiki, M., Yoneda, Y., Ishikawa, T., Ozawa, K., Tanaka, T., Matsuura, S., Kawai, J., Okazaki, Y., Muramatsu, M., Inoue, Y., Kira, A. and Hayashizaki, Y. RIKEN integrated sequence analysis (RISA) system--384-format Genome Res. 10 (11), 1757-1771 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cDNA library was prepared and sequenced in Mouse Genome Encyclopedia Project of Genome Exploration Research Group in Riken Genomic Sciences Center and Genome Science Laboratory in RIKEN. Division of Experimental Animal Research in Riken contributed to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The RIKEN Genome Exploration Research Group Phase II Team and the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FANTOM Consortium.
Functional annotation of a full-length mouse cDNA collection
Nature 409, 685-690 (2001)
Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia;
Sciurognathi; Muridae; Murinae; Mus.
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/etrain="C57BL/6J"
/db_xref="FANTOM_DB:A430057F16"
/db_xref="taxon:10090"
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High-efficiency full-length cDNA cloning
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cDNA clone CSODK009YE12 5-PRIME, mRNA sequence.
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2 rue Gaston Cremieux, CP 5706 - 91057 EVRY cedex - FRANCE
Email: seqrefégenoscope.ons.fr, Web : www.genoscope.ons.fr
1st strand cDNA was primed with a NotI-oligo(dT) primer. Five prime
end enriched, double-strand cDNA was digested with Not I and cloned
into the Not I and EoR V sites of the privxSpORT 6 vector. Library
was normalized. Library was constructed by Life Technologies, a
division of Invitrogen. This sequence belongs to sequence cluster
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Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini;
 GlyTrpAsnAspProAspMetLeuValIleGlyAsnPheGlyLeuSerTrpAsnGlnGln
                                                                                                                                                                                                               AGCTGGAATGACCCAGACATGTTAGTGATCGGCAACTTTGGCCTCAGTTGGGACCAGCAG
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                                                                                    667 TATTACTGCAATCATTGGAGAAATTTTGATGATGTTTATGATTCCTGGGAAAGCATAAAG
                                                                                                                       SerileLeuAspTrpThrSerPheAsnGlnGluArgIleValAspValAlaGlyProGly
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 For more information about this cluster, see http://www.genoscope.cns.fr/cdna?s=CSODK009BC06QP1&c=10506.r.
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1 (bases 1 to 1086)

1 (bases 1 to 1086)

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Homo sapiens
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AL554978
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us-10-602-219-12.p2n.rst

Query Match: 73.42% Indels: 4 DB: 5 Gaps: 0 US-10-602-219-12 (1-421) x BX354096 (1-1014)	5 AsnProGluLeuHisLeuGlyCys 11	Db 90 GACATCCTGGGGCTGACACTGGACATGGCATGGCATGGC	5 SerGlutysLeuphemetGlumetAlaGluLeumetValSerGluGlyTrpLysAspAla	GlyTyrGluTyrLeuCysIleAspAspCysTrpMetAlaProGlnArgAspSerGluGly	Qy 105 ArgLeuGlnalaAspProGlnargPheProHisGly11eArgGlnLeuAlaAsnTyrVal 124 Db 330 AGACTTCAGGCAGACCCTCAGGGCTTTCCTCATGGGATTCGCCAGCTAATTATGTT 389	QY 125 HisserlysGlyLeuLysLeuGlyIleTyrAlaAspValGlyAsnLysThrCysAlaGly 144	Qy 145 PheProGlySerPheGlyTyrTyrAspileAspAlaGlnThrPheAlaAspTrpGlyVal 164	Qy 165 AspLeuLeuLysPheAspGlyCysTyrCysAspSerLeuGluAsnLeuAlaAspGly-Ty 184	Oy 184 rlysHisMetSerLeuAlaLeuAsnArgThrGlyArgSerIleValTyrSerCysGluTr 204	Oy 204 pProLeuTyrMetTrpProPheGlnLysProAsnTyrThrGluleArgGlnTyrCysAs 224	Qy 224 nHisTrpArgAsnPheAlaAspIleAspAspSerTrpLysSerIleLysSerIleLeuAs 244	Qy 244 pTrpThrSerPheAsnGlnGluArg1leValAspValAlaGlyProGlyGlyTrpAsnAs 264	Qy 264 pProAspMetLeuVallleGlyAsnPheGlyLeuSerTrpAsnGlnGlnValThrGlnMe 284	Qy 284 talaLeuTrphlaIleWetalaalaProLeuPheMetSerAsnAspLeuArgHisIleSe 304	Qy 304 rProGlnAlaLysAlaLeuLeuGlnAspLysAspValIleAlaIleAsnGlnAspProLe 324	324	
Qy 241 SerileLeuAspTrpThrSerPheAsnGlnGluArgileValAspValAlaGlyProGly 260 	Oy 261 GlyTrpAsnAspProAspMetLeuValIleGlyAsnPheGlyLeuSerTrpAsnGlnGln 280 Db 785 GGTTGGAATGACCCAGATATGTTAGTGATTGGCAACTTTGGCTCGGAATCAGCAA 844 Oy 281 ValThrGlnMetAlaLeuTrpAlaIle-MetAlaAlaProLeuPheMetSerAsnAspLe 300 Dh 845 GTBACTTGGCCCTCAGCTGGCAATCAGCAACTTGGCAACTTGGCAATCAGCAACAGAACAACAACAAAAAAAA	300 uArgHisIleSerProGlnAlaLysAlaLeuLeuGlnAspLysAspValIleAlaIleAs	320 nGlnaspProLeuGlyLysGlnGlyTyrGlnLeuArgGlnGlyAspAsnPheGl 	Qy 340 pGluArgProLeuSerGlyLeuAlaTrpalaValAlaMetlleAsnArgGln 357	RESULT 9 BX354096 LOCUS LOCUS DEFINITION BX354096 Homo sapiens NEUROBLASTHE. BS-NORMALIZED Homo sapiens CRNA COT SS-NORMALIZED Homo sapiens		NISM	REFERENCE 1 (Lases 1 to 1014) AUTHORS Li,W.B., Gruber,C., Jessee,J. and Polayes,D. TITLE Full-length cDNA libraries and normalization		I the GABICEN CEMPLEMS. 2 Interpretable Segretégenoscope.cns.fr. Web : www.genoscope.cns.fr 1st strand cDNA was primed with a NotI-oligo(dT) primer. Five prime end enriched, double-strand cDNA was diagested with Not I and Cloned into the Not I and Roop V sites of the nowvenorm is worthn	was normalized. Library was constructed by Life Technologies, a division of Invitrogen. This sequence belongs to sequence cluster 10506.r	For more information about this cluster, see http://www.genoscope.cns.fr/cdna?s=CSODC014DD02QP1&c=10506.r. FEATURES Location/Qualifiers source 11014	/ organism="Homo Bapiens" /mol_type="mRNA" /db_xref="taxon:9606" /clone="CSODCA4YH04"	/tlsBHRE_TYPE=="NEUKNUBLABSTOMA COI 25-NOKWALLZED" /clone_lib=="Homo sapiens NEUKOBLASTOWA COI 25-NOKWALIZED" /note="list strand colon was primed with a NotI-oligo(dT) primer. Five prime end enriched, double-strand cDNA was	ulgebrou with NOC 1 and Cloudu into the NOC 1 and ECOK v sites of the pCMVSPORT 6 vector. Library was normalized."	ent Scores: 1.8e-175 Length:	Score: 1699.00 Matches: 317 Percent Similarity: 97.54% Conservative: 0 Best Local Similarity: 97.54% Mismatches: 7

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BMS64282
AGENCOURT_6560104 NIH_MGC_119 Homo sapiens cDNA clone IMAGE:5742198
5', mRNA sequence.
BMS64282
BMS64282. GI:18811955
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1 (bases 1 to 1067)

NIH-MGC http://mgc.nci.nih.gov/.

NIH-MGC http://mgc.nci.nih.gov/.

Unpublished (1999)

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Contact: N.G. E.

Contact: N.G. E.

Consortium (LINL)

DNA Sequencing by: Agencourt Bioscience Corporation

Clone distribution: MGC clone distribution information can be
                                                                            AlaAsnTyrValHisSerLysGlyLeuLysLeuGlyIleTyrAlaAspValGlyAsnLys
                                                                                                                                                                                 AspTrpGlyValAspLeuLeuLysPheAspGlyCysTyrCysAspSerLeuGluAsnLeu
                                                                                                                                                                                                                                                                  486 GACTGGGGAGTAGATCTGCTAAAATTTGATGGTTGTTACTGTGACAGTTTGGAAAATTTG
                                                                                                                                                                                                                                                                                                                         AlaAspGlyTyrLysHisMetSerLeuAlaLeuAsnArgThrGlyArgSerIleValTyr
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                                        306 GATTCAGAAGGCAGACTTCAGGCAGACCCTCAGCGCTTTCCTCATGGGATTCGCCAGCTA
                                                                                                                    366 GCTAATTATGTTCACAGCAAAGGACTGAAGCTAGGGATTTATGCAGATGTTGGAAATAAA
                                                                                                                                                            ThrCysAlaGlyPheProGlySerPheGlyTyrTyrAspIleAspAlaGlnThrPheAla
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Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleos
Mammalia; Butheria; Buarchontoglires; Primates; Catarrhini;
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                                                                                                                                                                                                                   Hominidae; Homo.

I (Dases 1 to 999)

Li, W.B., Gruber, C., Jessee, J. and Polayes, D.

Li, W.B., Gruber, C., Jessee, J. and Polayes, D.

Lu, P.B., Gruber, C., Jessee, J. and Polayes, D.

Lu, P.B., Solution of this sequence version replaced gi:31274445.

On Feb 15, 2010 this sequence version replaced gi:31274445.

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1st strand cDNA was primed with a NotI-oligo(dT) primer. Five prime end enriched, double-strand cDNA was digested with Not I and cloned into the Not I and EcoR V sites of the pCWVSPORT 6 vector. Library was normalized. Library was constructed by Life Technologies, a division of Invitrogen. This sequence belongs to sequence cluster
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                   ALS52630
ALS52630 Homo sapiens PLACENTA COT 25-NORMALIZED Homo sapiens CDNA clone CSODI067YJ01 5-PRIME, mRNA sequence.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /tissue type="PIACENTA COT 25-NORMALIZED"
/clone_lib="Homo sapiens PLACENTA COT 25-NORMALIZED"
/note="lst strand cDNA was primed with a NotI-oligo(dT)
primer. Five prime end enriched, double-strand cDNA was
digested with Not I and cloned into the Not I and EcoR V
sites of the pCMVSPORT 6 vector. Library was normalized."
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Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini;
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/mol_type="mRNA"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1005 bp mRNA linear EST 02-APR-2002
_6829871 NIH_MGC_99 Homo sapiens cDNA clone IMAGE:5923640
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I (bases I to 1005)

NIH-MGC http://mgc.nci.nih.gov/.

National Institutes of Health, Mammalian Gene Collection (MGC)

Unpublished (1999)

Contact: Robert Strausberg, Ph.D.

Email: Gapbs-remail.nih.gov
Tissue Procurement: Lou Staudt

CDNA Library Preparation: Rubin Laboratory

CDNA Library Preparation: Rubin Laboratory

CDNA Library Preparation: Rubin Laboratory

CDNA Library Preparation: Rubin Laboratory

CDNA Library Preparation: Rubin Laboratory

CDNA Library Preparation: Rubin Laboratory

CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)

DNA Sequencing by: Agencourt Bioscience Corporation

Clone distribution: MGC clone distribution information can be found through the I.M. A.G.E. Consortium/LLNL at:

http://image.llnl.gov

Plate: LLCMC092 row: h column: 09

High quality sequence stop: 676.
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Mammalia, Butheria, Buarchontoglires, Primates, Catarrhini,
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5', mRNA sequence.
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//lab host="mHydros"
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Plate: LLAM12759 row: p column: 07
High quality sequence stop: 761.
Location/Qualifiers
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GGCACGAG(G). Size-selected >500bp for average insert size 1.8kb. Library constructed by Ling Hong in the laboratory of Gerald M. Rubin (University of California, Berkeley) using ZAP-CDNA synthesis kit (Stratagene) and Superscript II RT (Life Technologies). Note: this is a NIH_MGC Library."
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Matches:
Conservative:
Mismatches:
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                                                                                              3.89e-171
1659.50
96.63%
95.71%
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1 (bases 1 to 922)
Magness, C.L., Fellin, P.C., Thomas, M.J., Korth, M.J., Agy, M.B., Proll, S.C., Fitzgibbon, M., Scherer, C.A., Miner, D.G., Katze, M.G. an Iadonato, S.P.
Analysis of the Macaca mulatta transcriptome and the sequence Genome Biol. 6 (7), R60 (2005)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Contact: C. Magness
Illumigen Biosciences Inc.
11lumigen Biosciences Inc.
2023 Airport Way S. Suite 450, Seattle, WA 98134, USA
Tel: 2063780400
Fax: 2063780408
Email: cmagness@illumigen.com
Sequenced on 2004.03.02. 796 Q20 bases. Library Preparation: Prof.
Michael Karze Lab at University of Washington DNA Sequencing:
Illumigen Biosciences Inc. For further information, see
                                                                                                                                                                                                                                                                                             CO645623 922 bp mRNA linear EST 23-JUL-2(
LLUMICEN MCQ_24642 Katze MMLV Macaca mulatta cDNA clone
IBIUW:23923 5' similar to Bases 5 to 920 highly similar to human
GLA (Hs.69089), mRNA sequence.
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/lab_host="Electromax DH10B"
/clone lib="Katze MMLV"
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Site_2: BsrG I; Created from CloneMiner cDNA Library
ConsTruction kit (catalog #18249-029)"
In-GlyTyrGlnLeu-ArgGlnGly-AspAsnPheGlu---ValTrpGluArgProLeuS
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PCR PRimers
FORWARD: CCCTCACTAAAGGGAACAAAA
BACKWARD: CACTATAGGGCGAATTGGGTA
Insert Length: 922 Std Error: 0.00
Plate: CL000111 row: E column: 08
Seq primer: CCCTCACTAAAGGGAACAAAA
POLYA=NO.
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/organism="Macaca mulatta"
/mol_type="mRNA"
/strain="Indian"
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/clone="IBIUW:23923"
/sex="female"
                                                                                                                                                                                                                                                                                                                                                                                                                                               Macaca mulatta (rhesus monkey)
Macaca mulatta
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CO645623.1 GI:50567117
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AUTHORS
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Contact: Genoscope
Contact: Genoscope
Contact: Genoscope
Contact: Genoscope
Contact: Certain String Sequences
Z rue Gaston Cremieux, CP 5706 - 91057 EVRY cedex - FRANCE
Email: sequenceScope.cns.fr, Web : www.genoscope.cns.fr
Ist strand cDNA was primed with a NotI-oligo(dT) primer. Five prime
end enriched, double-strand cDNA was digested with Not I and cloned
into the Not I and EcoR V sites of the pCMVSPORT 6 vector. Library
was normalized. Library was constructed by Life Technologies, a
division of Invitrogen. This sequence belongs to sequence cluster
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              For more information about this cluster, see http://www.genoscope.cns.fr/cdna?s=CSODK009BC06NP1&c=10506.r. Location/Qualifiers
                                                                                                                                                                        Hominidae, Homo.

1 (bases 1 to 1026)

1 (hases 1 to 1026)

1 (hases 1 to 1026)

1 hard Homo.

1 Jessee, J. and Polayes, D.

1 Full-length cDNA libraries and normalization

Unpublished (2001)

On Feb 16, 2001 this sequence version replaced gi:31315840.
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308
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5
CDNA clone CS0DK009YE12 3-PRIME, mRNA sequence
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Matches:
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                                           GI:46256603
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98.41%
98.09%
71.24%
                                                                                    sapiens (human)
                                                                                        Homo sapiens
Homo sapiens
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AL577581.3
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1 (bases 1 to 1296)
Clark A.G., Glanowski, S., Nielson, R., Thomas, P., Kejariwal, A., Ferriera, S., Wanghy, B., Ferriera, S., Wang, G., Zheng, X.H., White, T.J., Sninsky, J.J., Adams, M.D. and Cargill, M.
Inferring nonneutral evolution from human-chimp-mouse orthologous
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Direct Submission
Submitted (16-NOV-2003) Celera Genomics, 45 West Gude Drive, Rockville, MD 20850, USA
Fockville, MD 20850, USA
This sequence was made by sequencing genomic exons and ordering
                        317 ileAlaileAsnGlnAspProLeuGlyLysGlnGlyTyrGlnLeuArgGlnGlyAspAsn
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Conservative:
Mismatches:
Indels:
Gaps:
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/organism="Mus musculus"
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them based on alignment.
Location/Qualifiers
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1632.00
81.10%
72.01%
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20 9 40 420

260

COMMENT

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1080
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321 GlnAspProLeuGlyLysGlnGlyTyrGlnLeuArgGlnGlyAspAsnPheGluValTrp 340
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Perfect score: Sequence:

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Scoring table:

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Searched:

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Adu 66915 Human alp Ada 2444 Human alp Ada 2521 Human rGA Add 84746 Human rGA Add 8675 Human rGA Add 8675 Human alp Ada 2524 Human alp Ada 2524 Human alp Add 8622 Human alp Add 8622 Human alp Add 8622 Human alp Add 8622 Human alp Add 8622 Human alp Add 8622 Human alp Add 8622 Human alp Add 8622 Human alp Add 8622 Human alp Add 8622 Human alp Add 8622 Human alp Add 8622 Human alp Add 8622 Human alp Add 8622 Human alp Add 8622 Human alp Add 8622 Human alp Add 8622 Human alp Add 8622 Human alp Add 8624 Human alp Add 8620 Human alp Add 8620 Human alp Add 8620 Human alp Add 8620 Human alp Add 8620 Human alp Add 8620 Human alp Add 8620 Human alp Add 8620 Human alp Add 8620 Human alp Add 8620 Human alp Add 8620 Human alp Add 8620 Human alp Add 8620 Human alp Add 8620 Human alp Add 8620 Human alp Add 8620 Human alp Add 8620 Human alp Add 8620 Human alp Add 8620 Human alp Add 8620 Human alp Add 8620 Human alp Add 8620 Human alp Add 8620 Human alp Add 8620 Human alp Add 8620 Human alp Add 8620 Human alp Add 8620 Human alp Add 8620 Human alp Add 8620 Human alp Add 8620 Human alp Add 8620 Human alp Add 8620 Human alp Add 8620 Human alp Add 86200 Human alp Add 86200 Human alp Add 86200 Human alp Add 86200 Human alp Add 86200 Human alp Add 86200 Human alp Add 86200 Human alp Add 86200 Human alp Add 86200 Human alp Add 86200 Human alp Add 86200 Human alp Add 86200 Human alp Add 86200 Human alp Add 86200 Human alp Add 86200 Human alp Add 86200 Human alp Add 86200 Human alp Add 86200 Human alp Add 86200 Human alp Add 86200 Human alp Add 86200 Human alp Add 86200 Human alp Add 86200 Human alp Add 86200 Human alp Add 86200 Human alp Add 86200 Human alp Add 86200 Human alp Add 86200 Human alp Add 86200 Human alp Add 86200 Human alp Add 86200 Human alp Add 86200 Human alp Add 86200 Human alp Add 86200 Human alp Add 86200 Human alp Add 86200 Human alp Add 86200 Human alp Add 86200 Human alp Add 86200 Human alp Add 86200 Human alp Add 86200 Human alp Add 86200 Human alp Add 86200 Human alp Add 86200 Human alp Add 86200 Human alp Add 
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therapeutic, rGAL-8, gene, ds.
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1. .126
/*tag
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                                        AAD45221
AD84746
AD848774
ADM48676
ADM66911
AEA27440
ADB4752
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ADM86917
ABA746
AAAF2219
ADM66917
ABA746
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AEB43187
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Add84750 Human alp
Adj88276 Human WT
Adm48680 Human wil
                                                                                                                               08:34:41; Search time 666 Seconds (without alignments) 4212.966 Million cell updates/sec
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                                                                                                                                                                                                                                            1 MQLRNPELHLGCALALRFLA......RLRSHINPTGTVLLQLENTM 421
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                        GenCore version 5.1.6
(c) 1993 - 2005 Compugen Ltd
                                                                                               frame_plus_p2n model
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                                                                                                                                                                                                                                                                                                                                                                                             4996997 seqs, 3332346308 residues
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Maximum Match 100%
Listing first 45 summaries
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ADD84750
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ADM48680
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Ygapop 10.0 , Ygapext
Fgapop 6.0 , Fgapext
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                                                                                                                                 December 26, 2005,
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Database :

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1021 GAACGACCTCTCAGGCTTAGCCTGGGCTGTAGCTATGATAAACCGGCAGGAGATTGGT 1080
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                               GCAGATGGTTATAAGCACATGTCCTTGGCCCTGAATAGGACTGGCAGAAGCATTGTGTAC
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                                                                                   GlnTyrCysAsnHisTrpArgAsnPheAlaAspIleAspAspSerTrpLysSerIleLys
                                                                                                                                          CAGTACTGCAATCACTGGCGAAATTTTGCTGACATTGATGATTCCTGGAAAAGTATAAAG
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                                                                                                                                                                                                                                                                                           ValThrGlnMetAlaLeuTrpAlaIleMetAlaAlaProLeuPheMetSerAsnAspLeu
                                                                                                                                                                                                                                                                                                         ArgHisIleSerProGlnAlaLysAlaLeuLeuGlnAspLysAspValIleAlaIleAsn
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                                                                                                                                                                                  SerIleLeuAspTrpThrSerPheAsnGlnGluArgIleValAspValAlaGlyProGly
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/product= "Human rGAL-8"
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                                                                                                                                                                                          The invention relates to human alpha-galactosidase truncated at the carboxy terminus and the production of enzymatically active recombinant human and animal lysosomal enzymes. The invention is useful for producing lysosomal enzymes for treating lysosomal storage diseases, producing altered or mutated proteins, enzymatically active or otherwise, to serve as precursors or substrates for further in vivo or in vitro processing to specialised industrial form for research or therapeutic uses, to produce more effective therapeutic enzyme, for producing antibodies against lysosomal enzymes for medical diagnostic use, and in any commercial process that involves substrate hydrolysis. The present
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                                                                                                                           Novel human alpha-galactosidase polypeptide useful for treating lysosomal
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CARGER S J. TURPEN T H. KUMAGAI M H.
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P-PSDB; AAE28210.
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                                                                 GACTGGGGAGTAGATCTGCTAAAAATTTGATGGTTGTTACTGTGACAGTTTGGAAAATTTG
                                                                                                                                                                                          GlnTyrCysAsnHisTrpArgAsnPheAlaAsplleAspAspSerTrpLysSerIleLys
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                                                                                                                                       541 GCAGATGGTTATAAGCACATGTCCTTGGCCTGAATAGGACTGGCAGAAGCATTGTGTAC
                                                                                                                                                                      SerCysGluTrpFroLeuTyrMetTrpFroPheGlnLysProAsnTyrThrGluIleArg
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Pabry's disease; Gaucher's disease; human; gene; ds.
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                                                                                                                                                                                                                                                                                      New polynucleotide for producing active recombinant human and animal lysosomal enzymes in a plant expression system that can be used in enzyme replacement therapy.
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13-NOV-2001; 2001US-00993059.
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                                                                                                                                       (GARG/) GARGER S J.
(TURP/) TURPEN T H.
(KUMA/) KUMAGAI M H.
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05-MAY-1989; 89US-00347637.

22-OCT-1990; 90US-0060244.

16-JAN-1991; 91US-00641617.

16-JAN-1991; 91US-00737899.

01-AUG-1991; 91US-00737899.

01-AUG-1991; 91US-00737899.

01-AUG-1991; 91US-00176414.

19-JAN-1994; 94US-00116414.

19-JAN-1994; 94US-00116414.

19-JAN-1994; 94US-0011641237.

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                                                                                                                                                                                                                                                                                                                                                                                                                           Galactosidase; Gal; lysosomal enzyme; enzyme replacement therapy;
lysosomal storage disease; Gaucher's disease; Niemann-Pick disease;
Fabry disease; Tay-Sachs disease; cardiovascular; nephrotrophic; human;
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17-FEB-1899, 89US-0016071.
22-OCT-1992, 90US-00500244.
31-UUL-1992, 92US-00997733.
29-DEC-1992, 93US-00176414.
19-JAN-1994, 94US-00176414.
21-MA-1994, 94US-00134003.
21-MA-1994, 94US-00346072.
26-UUL-2000, 2000US-00626127.
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POGUE G P.
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lysosomal enzymes in plants by a transient plant expression system. The invention relates to glucocerebrosidase (GCB, GCB) and alphagalactosidase enzymes having a post-translational modification provided by the plant expression system. The invention is useful in enzyme replacement therapy for treating lysosomal storage diseases such as Gaucher's disease, Niemann-Pick disease, Pabry's disease and Tay-Sachs disease, Hurler's syndrome and Hurler-Scheie syndrome. The invention is also useful in researches for developing new approaches to medical treatment of lysosomal storage diseases and in industrial processes involving enzymatic substrate hydrolysis. The present sequence is the human alpha-galactosidase protein encoding DNA.
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Niemann-Pick disease; Fabry's disease; Tay-Sachs disease;
Hurler's syndrome; Hurler-Scheie syndrome; nephrotropic; human; gene; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        for
                                                                                                                                                                                                                                                                              1081 GGACCTCGCTCTTATACCATCGCAGTTGCTTCCCTGGGTAAAGGAGTGGCCTGTAATCCT
  961 CAGGACCCCTTGGGCAAGCAAGGGTACCAGCTTAGACAGGGAGACAACTTTGAAGTGTGG
                                                                                                                                                          GluArgProLeuSerGlyLeuAlaTrpAlaValAlaMetIleAsnArgGlnGluIleGly
                                                                                                                                                                                               1021 GAACGACCTCTCTCAGGCTTAGCCTGGGCTGTAGCTATGATAAACCGGGAGGAGGATTGGT
                                                                                                                                                                                                                                                GlyProArgSerTyrThrIleAlaValAlaSerLeuGlyLysGlyValAlaCysAsnPro
                                                                                                                                                                                                                                                                                                                                                                   GCCTGCTTCATCACACACACCCCCTGTGAAAAGGAAGCTAGGGTTCTATGAATGGACT
                                                                                                                                                                                                                                                                                                                                          AlaCysPheIleThrGlnLeuLeuProValLysArgLysLeuGlyPheTyrGluTrpThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    enzyme; glucocerebrosidase; GCB; GCR; alpha-galactosidase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A pharmaceutical composition comprising a lysosomal enzyme, useful senzyme replacement therapy for the treatment of lysosomal storage diseases, such as Fabry's disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The present invention relates to the production of human and animal
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1. .1266
/*tag= a
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                                                                       yLysGlnGlyTyrGlnLeuArgGl
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13-NOV-2001; 2001US-00993059.
20-MAR-2002; 2002US-00103327.
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P-PSDB; ADU66916.
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                                                         ValThrGlnMetAlaLeuTrpAlaIleMetAlaAlaProLeuPheMetSerAsnAspLeu 300
                                                                                                                                                                                                                                                                                                                                                                                                                           Gauchers disease; metabolic; neurological disease; niemann pick disease; genetic disorder; Fabry disease; metabolic disorder; tay sachs disease; antilipemic; cns-gen.; lysosome storage disease; alpha-galactosidase;
                                                                                                                                                                                                                                 ArgHisIleSerProGlnAlaLysAlaLeuLeuGlnAspLysAspValIleAlaIleAsn
                                                                                                                              GlnAgpProLeuGlyLysGlnGlyTyrGlnLeuArgGlnGlyAspAsnPheGluValTrp
                                                                                                                                                                          GAACGACCTCTCTCAGGCTTAGCCTGGGCTGTAGCTATGATAAACCGGCAGGAGATTGGT
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GlyTrpAsnAspProAspMetLeuValIleGlyAsnPheGlyLeuSerTrpAsnGlnGln
                                    GGTTGGAATGACCCCAGATATGTTAGTGATTGGCAACTTTGGCCTCAGCTGGAATCAGCAA
                                                                    GTAACTCAGATGGCCCTCTGGGCTATCATGGCTGCTCCTTTATTCATGTCTAATGACCTC
                                                                                                     CGACACATCAGCCCTCAAAGCTCTCCTTCAGGATAAGGACGTAATTGCCATCAAT
                                                                                                                                                             GluArgProLeuSerGlyLeuAlaTrpAlaValAlaMetIleAsnArgGlnGluIleGly
                                                                                                                                                                                                 GlyProArgSerTyrThr1leAlaValAlaSerLeuGlyLysGlyValAlaCysAsnPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "Human alpha-galactosidase protein"
                                                                                                                                                                                                                                                                                                                                                                                                             Human alpha-galactosidase DNA, rGAL-8, SEQ ID NO: 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
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13-NOV-2001; 2001US-00993059.
20-MAR-2002; 2002US-00103327.
                                                                                                                                                                                                                                                                                                                                                         AEA27444 standard; DNA; 1266
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                                                                                                                                                                            e.g.
                                                                                                                                                                                                                                                                                           The present invention relates to the production of human and animal lysosomal enzymes in plants by a transient plant expression system. The invention relates to glucocerebrosidase (GCB, GCR) and alphatinvention relates to glucocerebrosidase (GCB, GCR) and alphatiny expression system. The invention is useful in provided by the plant expression system. The invention is useful in enzyme replacement therapy for treating lysosomal storage diseases such as Gaucher's disease, Niemann-Pick disease, Rabry's disease, Tay-Sachs disease, Hurler's syndrome and Hurler-Scheie syndrome. The invention is also useful in researches for developing new approaches to medical treatment of lysosomal storage diseases and in industrial processes involving enzymatic substrate hydrolysis. The present sequence is the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MetGlnLeuargasnProGluLeuHisLeuGlyCysAlaLeualaLeuargPheLeuala
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61 AspSerCysIleSerGluLysLeuPheMetGluMetAlaGluLeuMetValSerGluGly
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                                                                                                                  New isolated polypeptides useful for producing lysosomal enzymes in plants to be utilized in enzyme replacement therapy or for the therapeutic treatment of human or animal lysosomal storage diseases,
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                                                                                                                                                                                                                                                    Disclosure; SEQ ID NO 11; 88pp; English.
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Kumagai
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Best Local Similarity:
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The invention relates to human alpha-galactosidase truncated at the carboxy terminus and the production of enzymatically active recombinant human and animal lysosomal enzymes. The invention is useful for producing lysosomal enzymes for treating lysosomal storage diseases, producing altered or mutated proteins, enzymatically active or otherwise, to serve as precursors or substrates for further in vivo or in vitro processing to produce more effective therapeutic enzyme, for produce more effective therapeutic enzyme, for producing antibodies against lysosomal enzymes for medical diagnostic use, and in any commercial process that involves substrate hydrolysis. The present
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                                                                                                                                                                                                                                                                                   Garger SJ, Turpen TH,
                                                                                                                                                                            (GARG/) GARGER S J.
(TURP/) TURPEN T H.
(KUMA/) KUMAGAI M H.
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therapeutic; rGAL-4; gene; ds.
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/product= "Human rGAL-4 protein"
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New polynucleotide for producing active recombinant human and animal lysosomal enzymes in a plant expression system that can be used in enzyme replacement therapy.
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                                                                                                                                                                                                                                                                                                                                                                                                                                 The invention relates to human alpha-galactosidase derivatives and the nucleic acids encoding them. The polypeptides are used in a method for producing active recombinant human and animal lysosomal enzymes in a plant expression system. The enzymes can be used in enzyme replacement therapy for the therapeutic treatment of human and animal lysosomal diseases. This sequence represents DNA encoding a human alpha-
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                           Location/Qualifiers
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(TURP/) TURPEN T H.
(KUMA/) KUMAGAI M H.
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P-PSDB; ADD84747.
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  Homo sapiens.
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ThrCysAlaGlyPheProGlySerPheGlyTyrTyrAspIleAspAlaGlnThrPheAla
               ACCTGCGCAGGCTTCCCTGGGAGTTTTGGATACTACGACATTGATGCCCAGACCTTTGCT
                                                     AspTrpGlyValAspLeuLeuLysPheAspGlyCysTyrCysAspSerLeuGluAsnLeu
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Galactosidase, GAL; gene therapy; lysosomal storage Fabry's disease; Gaucher's disease; human; gene; ds
        Human rGAL- 4 (galactosidase) DNA
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                                                ThrCygAlaGlyPheProGlySerPheGlyTyrTyrAspIleAspAlaGlnThrPheAla
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                                                                                                                                                                                                                                                                  GGTTGGAATGACCCAGATATGTTAGTGATTGGCAACTTTGGCCTCAGCTGGAATCAGCAA
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                          GCTAATTATGTTCACAGCAAGGACTGAAGGTAGGGATTTATGCAGATGTTGGAAATAAA
                                                                                  ASPITPG1yValAspLeuLeuLySPheAspG1yCySTyrCySBapSerLeuGluAsnLeu
                                                                                                GACTGGGGGAGTAGATCTGCTAAAATTTGATGGTTGTTGTTGACTGTGACAGTTTGGAAAATTTG
                                                                                                                 AlaAspGlyTyrLysHisMetSerLeuAlaLeuAsnArgThrGlyArgSerIleValTyr
                                                                                                                              GCAGATGGTTATAAGCACATGTCCTTGGCCCTGAATAGGACTGGCAGAAGCATTGTGTAC
                                                                                                                                                     SerCysGluTrpProLeuTyrMetTrpProPheGlnLysProAsnTyrThrGluIleArg
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GATTCAGAAGGCAGACTTCAGGCAGACCCTCAGCGCTTTCCTCATGGGATTCGCCAGCTA
                AlaAsnTyrValHisSerLysGlyLeuLysLeuGlyIleTyrAlaAspValGlyAsnLys
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The invention relates to nucleotide encoding galactosidase (GAL). The invention is useful in gene therapy. The polynucleotides and polypeptides are useful in treating human and animal lysosomal storage diseases, e.g. Fabry's disease and Gaucher's diseases. The present sequence is human GAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         New lysosomal enzymes, useful in treating human and animal lysosomal storage diseases, e.g. Fabry's disease and Gaucher's diseases.
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                          location/Qualifiers
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8BUS-0018071.
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31-JUL-1992;
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Galactosidase; Gal; lysosomal enzyme; enzyme replacement therapy; lysosomal storage disease; Gaucher's disease; Niemann-Pick disease; Pabry disease; Tay-Sachs disease; cardiovascular; nephrotrophic; human; gene; ds.
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GCCTGCTTCATCACACACCTCCTCCTGTGAAAAGGAAGCTAGGGTTCTATGAATGGACT
                                                                                                                                                                                 SerArgLeuArgSerHis1leAsnProThrGlyThrValLeuLeuGlnLeuGluAsnThr
                                                                                                                                                                                                              TCAAGGTTAAGAAGTCACTAAAATCCCACAGGACTGTTTTGCTTCAGGTAGAAAACACA
                                                                            AlaCysPhelleThrGlnLeuLeuProValLysArgLysLeuGlyPheTyrGluTrpThr
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88US-00160771.

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POGUE G P.
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/product= "Human alpha-galactosidase protein"
/transl_except= (pos:1. .6, aa:Gln)
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20-MAR-2002; 2002US-00103327.
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                                         The present invention relates to novel galactosidase (Gal) proteins such as rGAL-12, rGAL-25 or rGAL-25.R. The methods and compositions of the present invention are useful for producing recombinant lysosomal enzymes for enzyme replacement therapy for treating human and animal lysosomal storage diseases such as Gaucher's disease, Niemann-bick disease, Pabry disease and Tay-Sachs disease. The present sequence is human wild type rGAL-4 DNA used in the exemplification of the invention.
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                                                                                                                                                                                                          The present invention relates to the production of human and animal lysosomal enzymes in plants by a transient plant expression system. The invention relates to glucocerebrosidase (GCB, GCR) and alphatian adaptactosidase enzymes having a post-translational modification provided by the plant expression system. The invention is useful in enzyme replacement therapy for treating lysosomal storage diseases such as Gaucher's disease, Niemann-Pick disease, Pabry's disease and Tay-Sachs also useful in researches for developing new approaches to medical treatment of lysosomal storage diseases and in industrial processes involving enzymatic substrate hydrolysis. The present sequence is the human alpha-galactosidase protein encoding DNA.
                                                                                                for
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                                                                                              on comprising a lysosomal enzyme, useful for the treatment of lysosomal storage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 1278 BP; 325 A; 293 C; 333 G; 327 T; 0 U; 0 Other;
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                                                                                                                                                                       Disclosure; SEQ ID NO 7; 88pp; English
Kumagai MH
                                                                                                                enzyme replacement therapy for the
diseases, such as Fabry's disease.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         901 CGACACATCAGCCCTCAAGCCCATCAGCATAAGGATAAGGACATAATTGCCATCAAT
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GlnTyrCysAsnHisTrpArgAsnPheAlaAspIleAspAspSerTrpLysSerIleLys
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                                                              SerCysGluTrpProLeuTyrMetTrpProPheGlnLysProAsnTyrThrGluIleArg
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human alpha-galactosidase DNA, rGAL-4, SEQ ID NO:
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ThrCysAlaGlyPheProGlySerPheGlyTyrTyrAsplleAspAlaGlnThrPheAla
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                                                                                                                                                                                                                                                                                                                                                                                                                              lysosomal enzymes in plants by a transient plant expression system. The invention relates to glucocerebrosidase (GCB, GCR) and alpha-galactosidase (Gal) enzymes having a post-tranalational modification provided by the plant expression system. The invention is useful in enzyme replacement therapy for treating lysosomal storage diseases such as Gaucher's disease, Niemann-Pick disease, Fabry's disease, Tay-Sachs disease, Wirler's syndrome and Hurler-Scheis syndrome. The invention is also useful in researches for developing new approaches to medical treatment of lysosomal storage diseases and in industrial processes involving enzymatic substrate hydrolysis. The present sequence is the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TrpLysAspAlaGlyTyrGluTyrLeuCysIleAspAspCysTrpMetAlaProGlnArg
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                                                                                                                                                                                                                                                                                                                 New isolated polypeptides useful for producing lysosomal enzymes in plants to be utilized in enzyme replacement therapy or for the therapeutic treatment of human or animal lysosomal storage diseases,
                                                                                                                                                                                                                                                                                                                                                                                                                     present invention relates to the production of human and animal
/*tag= b
/product= "Human alpha-galactosidase protein"
/partial
/note= "No start codon"
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                                                                                                                                                                                                                                                                                                                                                                                         Disclosure; SEQ ID NO 7; 88pp; English
                                                                                                                                                                                                                                              Turpen TH, Kumagai MH;
                                                                                                                                                                                                                  LARG-) LARGE SCALE BIOLOGY CORP.
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13-NOV-2001; 2001US-00993059.
20-MAR-2002; 2002US-00103327.
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P-PSDB; AEA27441, AEA27472.
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Gaucher's disease.
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Best Local Similari
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                                                                                                    09-JUN-2005
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                                                           TrpLy8AspAlaGlyTyrGluTyrLeuCysIleAspAspCysTrpMetAlaProGlnArg
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                                                                                                                                                                                                                                                                                                                                                                                                        Novel human alpha-galactosidase polypeptide useful for treating lysosomal storage diseases.
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                                                                        lysosomal enzyme; lysosomal storage disease; ds.
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1. .1284
/*tag= a
/product= "Human rGAL-8R
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                                                                                                                                                                                                                                                                                                                                               Kumagai MH;
                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 1; Page 44-46; 88pp; English
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                                                                        Human; alpha-galactosidase;
therapeutic; rGAL-8R; gene;
                         (first entry)
                                                                                                                                                                                                                                                                                                                                             Garger SJ, Turpen TH,
                                                                                                                                                                                                                                                                                             (GARG/) GARGER S J.
(TURP/) TURPEN T H.
(KUMA/) KUMAGAI M H.
                                                                                                                                                                                                                                                                                                                                                                    2002-681656/73
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Best Local Similarity:
Query Match:
DB:
                                                 Human rGAL-8R DNA
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                         27-DEC-2002
                                                                                                           Homo sapiens
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AAD45224;
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GGACCTCGCTCTTATACCATCGCAGTTGCTTCCCTGGGTAAAGGAGTGGCCTGTAATCCT 1140
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                                                                                                                                                                                                                            AlaAsnTyrValHisSerLysGlyLeuLysLeuGlyIleTyrAlaAspValGlyAsnLys 140
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                                                         GATTCAGAAGGCAGACTTCAGGCAGACCCTCAGCGCTTTCCTCATGGGATTCGCCAGCTA
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                                   ThrMetGlyTrpLeuHisTrpGluArgPheMetCysAsnLeuAspCysGlnGluBro
                                                                                                          GATTCCTGCATCAGTGAGAAGCTCTTCATGGAGATGGCAGAGCTCATGGTCTCAGAAGGC
                                                                                                                                 TrpLysAspAlaGlyTyrGluTyrLeuCysIleAspAspCysTrpMetAlaProGlnArg
                                                                                                                                             ACCTGCGCAGGCTTCCCTGGGAGTTTTGGATACTACGACATTGATGCCCAGACCTTTGCT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        New polynucleotide for producing active recombinant human and animal lysosomal enzymes in a plant expression system that can be used in enzyme replacement therapy.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The invention relates to human alpha-galactosidase derivatives and the nucleic acids encoding them. The polypeptides are used in a method for producing active recombinant human and animal lysosomal enzymes in a plant expression system. The enzymes can be used in enzyme replacement therapy for the therapeutic treatment of human and animal lysosomal
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                                                                                                                                                                     alpha-galactosidase; rGAL-4; gene; ds; lysosomal enzyme; replacement therapy; lysosomal disease.
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lase derivative polypeptide of the invention
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P-PSDB; ADD84753.
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(KUMA/) KUMAGAI M H.
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Fabry's disease and Gaucher's diseases. The present sequence is human GAL.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        New lysosomal enzymes, useful in treating human and animal lysosomal storage diseases, e.g. Fabry's disease and Gaucher's diseases.
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Fabry's disease; Gaucher's disease; human; gene; ds.
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26-FEB-1988; 88US-00160771.

17-FEB-1989; 89US-00310881.

05-MAY-1989; 89US-00347637.

06-UNV-1989; 89US-00363138.

22-CCT-1990; 90US-00600244.

16-JAN-1991; 91US-00641617.

24-JUL-1991; 91US-00737899.

01-AUG-1991; 91US-007373.

31-JUL-1992; 92US-0092733.

30-DEC-1993; 93US-00176414.

19-JAN-1994; 94US-00184237.

14-CCT-1994; 94US-00184237.

14-CCT-1994; 94US-00184237.

13-MAY-1999; 99US-00324003.

26-JUL-2000; 2000US-0065127.
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